## Bernhard Cx Group

# **Bernhard**

Commissioning Review of Submittal Data for Construction

This submittal has been reviewed by the Commissioning Provider for general conformance related to the commissioning requirements in the contract documents and Owner's Project Requirements document. This review is not intended to verify overall equipment compliance of the design intent and no design direction shall be inferred or implied.

The Designer of Record shall verify overall compliance of the design intent according to the contract documents.

Y	4	Reviewed with Comments	12/10/24
		Reviewed with Comments	_
	4	Reviewed with No Comments	

Commissioning Review Comments are enclosed.

CLARK & ENERSEN: SEE ALL COMMENTS WITHIN.

1. UPDATE PERFORMANCE OF ALL COMPONENTS TO 300' ELEVATION

PROVIDE FACTORY MOUNTED ISOLATION DAMPERS ON DISCHARGE OF AH-2, AND BOTH INLET AND DISCHARGE OF AH-5A/5B

- 2. PROVIDE 0.035" TUBES ON ALL HEAT RECOVERY COILS
- 3. INLCUDE DIRTY APD LISTED ON FILTER SECTION IN TOTAL STATIC PRESSURE OF UNITS AND SIZE FANS ACCORDINGLY.
- 4. CONFIRM UV LIGHTS INCLUDED HAVE FUNCTIONALITY OF DETAIL 3/M6.01.
- 5. PROVIDE MINIMUM 9.12" TSP ON AH-2 PER SCHEDULE.
- 6. PROVIDE MINIMUM 8.55" TSP ON AH-5A/5B PER SCHEDULE.
- 7. PROVIDE PIPING AND COIL CONNECTIONS ON OPPOSITE SIDES FOR AH-5A VS AH-5B PER PLANS.
- 8. PROVIDE RECOMMENED DOOR SWINGS AS NOTED WITHIN,
- 9. CONFIRMING WITH OWNER IF 93% REDUNDANCY IS ACCEPTABLE FOR AH-2 SUPPLY FANS. WHAT OPTIONS ARE THERE TO ACHIEVE FULL N+1 WITH THE MOTORS?

REVIEWED	REVIEWED AND NOTED
REVISE AND RESUBMIT	REJECTED
this review do not relieve corequirements of the drawings is only for review of general coof the project and general or given in the contract doci responsible for confirming and dimensions; selecting fabricatic construction; coordinating the	e on the shop drawings during intractor from compliance with and specifications. This check informance with design concept impliance with the information uments. The contractor is discontinuous and correlating all quantities and on process and techniques of it work with that of all other work in a safe and satisfactory
CLARK &	ENERSEN
<sub>By</sub> <u>csharp</u>	Date01/08/2025



## CDI Contractors, LLC 3000 Cantrell Road Little Rock, Arkansas 72202 501 / 666-4300

Transmittal No 2024.11.25-4

RE: 23 73 13 - Air Handling Units

PROJECT: UAMS- CAMID DATE: Nov 25, 2024

To: UAMS 4301 W MARKHAM ST. SLOT 545

LITTLE ROCK AR 72205

US

ATTN: TAMARA BARRON JOB: 240147

WE ARE SENDING:		SUBMITTED FOR:				ACT	ACTION TAKEN:		
	Shop Drawings	<b>/</b>	Approval				Approved as Submitted		
	Letter		Your Use				Approved as Noted		
	Prints		As Requested			Returned After Loan			
	Change Order		Review and Comment			Resubmit			
	Plans						Submit		
	Samples	SEN	T VIA:				Returned		
	Specifications		Attached		Separate Cover		Returned for Corrections		
	Other:					Due Dec 09, 2024			
$\overline{}$	Submittal:						Other:		

Line	Item	Package	Code	Rev.	QTY	Date	Description	Status
1	Submittal		237313-02	1		Nov 25, 2024	PD:AHU - 5A	Submitted
2	Submittal		237313-01	1		Nov 25, 2024	PD:AH - 2	Submitted
3	Submittal		237313-03	1		Nov 25, 2024	PD:AHU - 5B	Submitted

REMARKS:

CC:

CLARK & ENERSEN, Mark Huettner

Signed:	
---------	--

MATTHEW HUGHES





# Quality People. Building Solutions.

Comfort Systems USA (Arkansas), Inc. P.O. Box 16620 Little Rock, AR 72231 Phone 501-834-3320 Fax 501-834-5416

Date: 11/20/2024

Return Request: 11/30/2024 Project: UAMS (CAMID) Supplier: Harrison Energy Manufacturer: Daikin

**Submittal:** Air Handling Units **Submittal Number:** 23 73 13-01

**Drawing # and Installation:** Mechanical Drawings

#### **ARCHITECT**

Clark Kenersen 2020 Baltimore Avenue, Suite 300 Kansas City, MO 64108 816-474-8237

#### **GENERAL CONTRACTOR**

CDI Contractirs 3000 Cantrell Rd. Little Rock, AR 72202 501-666-4300

#### **ENGINEER**

Clark Kenersen 2020 Baltimore Avenue, Suite 300 Kansas City, MO 64108 816-474-8237

#### **MECHANICAL SUBCONTRACTOR**

Comfort Systems USA (Arkansas), Inc. 9924 Landers Rd. N. Little Rock, AR 72117 501-834-3320

CSUSA PROJECT NO. 22-6069

sean@comfortar.com

# Submittal



Prepared For: Date:

Clark & Enerson November 1, 2024

Sold To: Job Name:
Comfort Systems USA UAMS CAMID

Harrison Energy Partners is pleased to provide the enclosed submittal for your review and approval.

**Qty.** Product Summary

2 Daikin Air Handling Units

Josh Robinson | Sales Engineer Harrison Energy Partners 1501 Westpark Drive, Suite 9 Little Rock, AR 72204-2457 Ph. 501-539-0633 The attached information describes the equipment we propose to furnish for this project, and is submitted for your approval.

**Indoor Air Handling Units** 

Tag	Qty.	Description	Model Number
AHU-2	1	Indoor Air Handling Unit	Daikin CAH064
AHU-5	1	Indoor Air Handling Unit	Daikin CAH011

- Double wall construction with 2" R13 insulation
- ASHRAE leakage class 6
- Access sections with view ports and lights as required
- Stainless steel drain pans in humidifier and cooling coil sections
- 8" base rail
- Galvanized steel interior liners
- Combination filter section
- Heat recovery coil section
- Steam IFB coil section
- Humidifier section
- · Chilled water coil section with UV lights
- Supply fan section
  - NOTE: AHU-5 is selected as a stacked unit. Software limitations only allow us to select one section with a supply fan, therefore one of the supply fan sections is labeled "return/exhaust." Both fan sections in this unit will be utilized as supply fans.





# **SUBMITTAL DATA**

Job Name UAMS CAMID

For

Sold To

**Prepared For** 

**Customer PO#** 

Prepared By Jake Skinner

Date 11/1/2024

#### AHU-2

#### **Technical Data Sheet**

Job Information

Job Name UAMS CAMID

Date November 01 2024

Submitted By JS

Software Version 13.43

Unit Tag AHU-2

LENGTH IS TOO LONG FOR END DUCT CONNECTION. CAN LARGE DISCHARGE PLENUM BE ADDED AND FIELD CUT TO EITHER TOP OR END DUCT CONNECTION?

**Technical Data Sheet** 



Unit Overview										
	Supply									
Model Number	Air Volume	Static P	ressure	External Dimensions						
Wiodel Halliber	cfm	External	Total	Height	Width	Length				
		inWc	inWc	in	in	in				
CAH064GDHM	26000	4.25	8.35	92*	124*	334				
*Not including base ra	*Not including base rails, coil connectors, drain connectors and control boxes.									

Unit							
Model Number:	CAH064GDHM						
Approval:	ETL Listed / ETL Listed to Canadi	an Safety Standards (ETL Label / I	ETLc Label)				
Construction:	High pressure low leakage construction						
Outer Panel:	24 gauge G90 Galvanized Steel (	24 gauge G90 Galvanized Steel (unpainted)					
Liner:	24 gauge Galvanized Steel (unle	ss noted per section)	SELECT AT 300'				
Insulation:	R-13 Injected Foam						
Unit Configuration:	Inline horizontal	Drive (Handling) Location:	Left				
Base:	8" formed channel	Wall Thickness:	2 in				
Altitude:	0 ft	Parts Warranty:	Standard One Year				

Plenum Section	Component: 1	Length: 22 in		Shipping Section: 1					
Air Pressure Drop									
	0.06 inWc								
		Custom Openings							
Custom Opening	Location	Width	Height	Rainhood w/Screen					
1	End	108 in	34 in	None					
		Door							
Location	Width	Opening	Window Type	Light					
Drive side	18 in	Outward	Round	LED marine light kit and					
				switch only					

Clarify if inlet isolation damper is provide/installed with unit or by others.

Combination Filter			Component: 2			Length: 22 in			Shipping Section: 1		
Access			Face Velocity			Face Area			Air Volume		
	Side		39	3 ft/min		66.2 ft <sup>2</sup>			26000 cfm		
Portion	Туре	Efficiency		Air Press	ure Drop		Number of	Height	Width	Depth	
			Clean Air	Mean Air	Dirty Air	User Spec	Filters				
Pre-Filter	Pleated	MERV 8	0.17 inWc	<b>0.58</b> inWc	1.00 inWc	N/A	18	24 in	20 in	2 in	
rie-riitei	rieateu	IVIERVO	O. I / ITIVVC	<b>0.36</b> INVVC	1.00 invvc	IN/A	5	12 in	24 in	2 in	
Filter	Varicel VXL	MERV 15	0.27 inWc	<b>1.13</b> inWc	2.00 inWc	N/A	18	24 in	20 in	12 in	
riitei	cartridge	IVIERV 13	U.Z7 INVVC	1.13 INVVC	2.00 invoc	IN/A	5	12 in	24 in	12 in	
					Door						
	Locatio	n			Width	dth Opening					
	Drive si	de			18 in	3 in Outward					
Special Options											
Sound Baffle						Filter Gauge					
		(As casing	details)			Magnehelic 0-5"					

Access Section	Component: 3	Length: 22 in	Ship	oing Section: 1
		Air Pressure Drop		
		0.00 inWc		
		Door		
Location	Width	Opening	Window Type	Light
Drive side	18 in	Outward	Round	LED marine light kit and switch only

Chilled Water	Coil		Comp	onent: 4			Length: 42 in				Shippir	ng Section	: 2	
Coil Model	Total Cap	acity	Sensik	ole Capacity	Numb	er of Coils	Number of Rows		Fins per Inch Tub		Tube	Diameter		Tube Spacing (Face x Row)
5WL1208B	3562991	3tu/hr	3562	356299 Btu/hr		2	8		12	0.6		625 in	1.5	0 in x 1.299 in
Air Volume			Air Tem	perature			Coil Air		Finned		Finned Face		rea	Face
	Ente	ring		L	eaving		Pressure		Height	Ler	ngth			Velocity
	Dry Bulb	Wet	Bulb	Dry Bulb	'	Wet Bulb	Drop							
26000 cfm	99.6 °F	77.:	2 °F	87.1 °F		73.8 °F	0.69 inWc		39 in	11	1 in	60.12	ft²	432 ft/min
	Fluid			Flow Rate	е	Pressui	re Drop	'	Velocity		Volum	ie		Weight
Entering	Le	eaving												
82.9 °F	9	5.4 °F		60.00 gp	m	8.60	ftHd	1	.70 ft/s		61.0 g	al		514.00 lb
	Conn	ection [[	Data Pe	r Coil]			Glycol Typ	е	Min. Fin Su	face		Tube Wall	I	Fouling Factor
Туре	Size		Lo	ocation	M	laterial			Temp.		Surfa	ce Temp.		
Threaded	2.50	in	Dri	ve side	Carb	on steel	Propylen (30%)	е	82.9 °F	:	82	2.9°F		0.000
	$\sim$	~~	Mater	ial				D	rain Pan		Drain Si	de		Turbospiral
Fin		Tube		Header		Ca	ise							
Aluminum .007	5 <mark>n Copp</mark>	er .020	in $\prec$	Copper	-	Galv.	steel	Stair	nless steel		Drive s	ide		Yes
						AHRI 410 C	ertification							
Sc	chedules	speci	fv 0.	035"	Coil	is NOT cer	rtified by AH	RI						
		БРООТ				Do	or							
Locatio	n		W	idth		Ope	ning		Window	Туре			Li	ght
Drive si	de		20	) in		Outv	ward		Rour	nd				light kit and h only

IFB Steam Coil	IFB Steam Coil Component: 5							Shipping Section	Shipping Section: 2		
Coil Model	Total Capacit	y Numb	er of Coils	Number of Rows		Fins po	er Inch	Tube Diameter	Tube Spacing (Face x Row)		
AMX12CE103.469. 01	1546300 Btu.	/hr	1		1	1	2	0.625 in	1.50 in x 1.299 in		
Air Volume	Air Temperature			ir Pressure	Finned H	eight	Finned Length	Face Area	Face Velocity		
	Entering Dry Bulb	Leaving Dry Bulb		Drop							
26000 cfm	17.6 °F	72.7 °F	0.1	15 inWc	69 ii	n	99 in	47.63 ft²	548 ft/min		
		Flui					Max	Superheat Temp.	in Steam Coil Inlet		
Stea	ım Pressure			Condens	ate Load						
1.	5.00 psig		1620.58 lb/hr				30.0 °F				
			C	Connection [	Data Per Coi	]					
Туре		Steam Size		Condens	sate Size		Location		Material		
Threaded		3.00 in		2.5	0 in		Drive side		Carbon steel		
				Mat	erial						
Fin			Tube			Heade	r		Case		
Copper .0	12 in	Со	opper .035 in			Carbon Steel		Galv. steel			

Access Section	Component: 6	Length: 24 in	Shipping Section: 3							
	Air Press	sure Drop								
	0.00	inWc								
Door										
Location	Width	Opening	Light							
Drive side	20 in	Outward	LED marine light kit with GFI outlet							

Future Chilled Water Coil	Component: 7	Length: 38 in		Shipping Section: 3			
1	lumber of Coils		Number of Rows				
	2			2			
Coil Air Pressure Drop	Finned Height	Finned Width	Face Area	Face Velocity			
0.20 inWc	39 in	111 in	60.12 ft <sup>2</sup>	432 ft/min			
Cor	nnection Location		Connection Material				
	Drive side		Carbon steel				
Coil Model		Drain Pan		Drain Pan Side			
Future Coil (Not Si	upplied)	Stainless steel	ess steel Drive side				
		AHRI 410 Certification	10 Certification				
		Coil is NOT certified by AHI	રા				
		Door					
Location	Width		Opening Light				
Drive side	22 in	(	Outward	LED marine light kit with GFI outlet			

Humidifier Section.
Humidifier manifold to be factory installed. Performance data is located at the end of this submittal

BOBKVU UAMS CAMID 6 11/1/2024

## AHU-2

**BOBKVU** 

**UAMS CAMID** 

7

11/1/2024

Confirm UVC light control panel furnished with unit meets the requirements in drawing detail.

Technical Data Sheet

							uela					
	Chilled Wate	r Coil		Component: 8		Length	n: 48 in			Shipping Se	ction: 4	
	Coil Model	Total Cap	pacity S	Sensible Capacity	Number of (	Coils Numb	er of Rows	Fins per Ir	nch	Tube Diam	neter	Tube Spacing (Face x Row)
	5WD0812B	2244626	Btu/hr 1	1352153 Btu/hr	2		12	8		0.625	in 1	.50 in x 1.299
	Air Volume	Ente	Ai ering	ir Temperature	Leaving		l Air ssure	Finned Height	Finned Length		ace Area	Face Velocity
		Dry Bulb	Wet Bu	ulb Dry Bulk	•	_	op			<b>9</b>		10.00,
	26000 cfm	99.6°F	77.2	_			inWc	39 in	111	l in d	0.12 ft²	432 ft/mii
		Water		Flow Ra		Pressure Drop		Velocity		Volume		Weight
	Entering	L	eaving			•						J
	45.0 °F	5	9.2 °F	315.70	gpm	14.30 ftHd		3.30 ft/s		92.0 gal		768.00 lb
			Connection	on [Data Per Coil]			Mii	n. Fin Surface		in. Tube Wal		ouling Factor
	Туре		Size	Locatio		Material		Temp.	Su	urface Temp.		
	Threaded	2	2.50 in	Drive s	ide C	arbon steel		45.0 °F		45.0 °F		0.000
				Material			_		Drain	Pan		Orain Side
	Fin Aluminum C	107E :	Tube		Header		Case	-l C+	talplac	o otool		rive side
	Aluminum .0	1075 IN	Copper .	020 in	Copper	410 Certificat	Galv. stee	el 5	tairiies	ss steel	L	rive side
rec	CERTIFIE was abridientity of Al-Cooling and As-hashing Cale desistands of 10  Aurices N+1	whic	h is base Sta	ordance with the don AHRI Stan andard. Certifically 100%	dard 410 w	thin the Rai	nge of St	andard Ratin	g Cond	ditions list	ed in Tal ctory.org	ole 1 of the
	ncy. Conf					Opening		Window				ight .
	incy is Drive			20 in		Outward		Rour	nd		UVC	Lights
				C 10		1 2 2 2 1	n: 42 in			Claire reine er Ca	-#: F	
	Supply Fan A	ırray		Component: 10						Shipping Se	ction: 5	
	Air	Static Pr	occuro	Fan Energ		n Performance Fan Shaft		eed	Dodur	ndancy(N-1)		Fan Circuit
	Volume*	ternal Tot		Index(FEI		Power*	·	Maximum	Redui	idancy(N-1)	МС	
	6500 cfm 4.2				41.7 kW	12.68 BHP 3			7	93.4 %	90.0	
						Fan Data	·					
is r	norethan	0.75'bles	sethar	Quantity o	f Fans W	heel Diameter	r Nun	nber of Blades		Discharge	N	lotor Location
gn.	Clamby /is	his is Air	foil / 2	4		18.25 in		12		Axial		Behind Fan
	ble.					Motor Data						
•	Power	Electrical Supply	Spee	ed Efficienc	y Enclos	ure Fram	e Size	Supplier	Numb Pol		ck Rotor current*	Full Load Current*
	15.0 HP	460/60/3 V/Hz/Phase	3500 r	rpm Premiui	m ODI	215 T	frame	Generic	2	! 1	11.01 A	17.50 A
		V/HZ/FHase				Fan Options						
	Isolatio	n Backdraft Da	mnore:	Provided		· air Options		Block Off I	Diate.	None		
	13010110	Piezomete	-	1 ring per fan				Piezometer De		16.26		
		i iczonicte		Provided				Isolator		Spring		
		Shaft Ground		ovided	VFD/Sta	rter/Disconne	ct Data	isolatol	. <del>, , , .</del> .	opring		
		Shaft Ground					utu					
				MMP I-Roy	VI 27 Ota	TCI7 DISCOTIFIC		Vo	ndor.	Factory S	tandard	
		Selection	n Type:	MMP J-Box	VI D/ Ota	Ter/Disconne			ndor:	Factory S	tandard	
	Не	Selection VFD I	n Type: Power:	15 HP		iter/ Disconne		Vol	ltage:	460 v		
	He	Selection VFD I light x Width x	n Type: Power: Depth:	15 HP 15.75 in x 11.81		iten/bisconne			ltage:	-		
	He	Selection VFD I light x Width x	n Type: Power: Depth:	15 HP				Vol	ltage:	460 v		
	Не	Selectior VFD I light x Width x Enc	n Type: Power: Depth:	15 HP 15.75 in x 11.81		Panel		Vol	ltage:	460 v Door Side	9	
		Selection VFD I light x Width x Enc Location	n Type: Power: Depth: losure:	15 HP 15.75 in x 11.81				Vol	ltage:	460 v Door Side		
		Selectior VFD I light x Width x Enc	n Type: Power: Depth: losure:	15 HP 15.75 in x 11.81		Panel Width	DI	Vol	Itage: nting:	460 v Door Side	ening ward	





Unit Sound Po	ower (dB)							
Туре	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz
Radiated:	86	76	73	77	74	66	49	51
Unit Discharge:	91	81	83	92	90	88	81	74
Unit Return:	86	76	73	77	74	66	49	51

Shipping Se	ction Detai	S														
Section	Length	١	<b>Neigh</b>	t					Corner W	eights (lb)		Ce	Center of Gravity (in)			
	in		lb			P1			P2	P3	P4	XX	YY	ZZ		
1	66		1738	}	4	23			423	446	446	34	62	46		
2	78		5432		16	532		1	683	1085	1033	30	63	49		
3	62		1395	)	3	17			317	381	381	34	62	39		
4	48		3885	)	12	296		1	360	678	614	16	64	48		
5	80		4236	)	12	210		1	235	908	883	34	63	45		
<b>Entire Unit</b>	334	1	6686	6	39	926		4	1066	4450	4309	175	63	46		
22	22 22 42	36	24	38	48	14	42	24	ł	YY ( <del>)</del>						
92 Z X	CWC ACCESS PBFILT	IFB STC	<sub>ത</sub> ACCESS	CWC	QWC	MP ARRAY	FAN ARRAY	PLENUM	92	P2 P1	_	Air Flow	<b>→</b>	P3 P4		
X											→ xx	Plan View		ŭ		
	66	78 Ele	6 vatio		48 N	L	80		1							

NOTE: Special components aren't included in the corner weights and center of gravity data.

NOTE: Shipping weights listed do not include weight of water (listed in coil section(s) above.

# **Shipping Protection**

**Shipping Bag** 

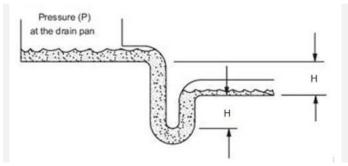
*NOTE:* Shipping protection is not meant for long term storage.

NOTE: In some instances a shipping bag cannot be applied. In these circumstances stretch wrap would be supplied.

Supply Static Pressure Drop		
Component	Option	Static Pressure Drop
Plenum Section	Plenum Section	0.06 insWg
Panel and Cartridge Filter	Panel and Cartridge Filter	1.72 insWg
Access Section	Access Section	
Chilled Water coil	Chilled Water coil	0.69 insWg
Steam Face and Bypass Coil	Steam Face and Bypass Coil	0.15 insWg
Access Section	Access Section	
Chilled Water coil	Chilled Water coil	0.20 insWg
Chilled Water coil	Chilled Water coil	1.03 insWg
Damper	Damper	
Supply Fan	Cabinet	0.01 insWg
Plenum Section	Plenum Section	0.24 insWg
External Static	External Static	4.25 insWg
Total Suppl	y Fan Static	8.35 insWg

#### PROVIDE MINIMUM 9.12" TSP PER SCHEDULE.

Minimum Recommended Drain Pan Trap Dimensions											
Shipping Section	Component	Н									
2	Chilled Water coil	5.44									
3	Chilled Water coil	6.14									
4	Chilled Water coil	8.20									



Dimensions provided as a courtesy and are recommended minimums only. Daikin is not responsible for supplying or designing drain pan traps and is not responsible for any damage caused by incorrect trap heights. The dimensions listed above should be reviewed and approved by a licensed plumbing professional.

This calculation is based on an assumption that 0.25 inches of the external static pressure is in the return duct and the remainder is in the supply duct. If actual conditions vary from this assumption then contact Applications for new trap height recommendations.

#### **AHRI Certification**



Certified by the AHRI Central Station Air-Handling Unit (AHU) Certification Program, which is based on AHRI Standard 430/431. AHRI certified units are subject to rigorous and continuous testing, have performance ratings independently measured and are third-party verified. Certified units may be found in the AHRI Directory at www.ahridirectory.org.

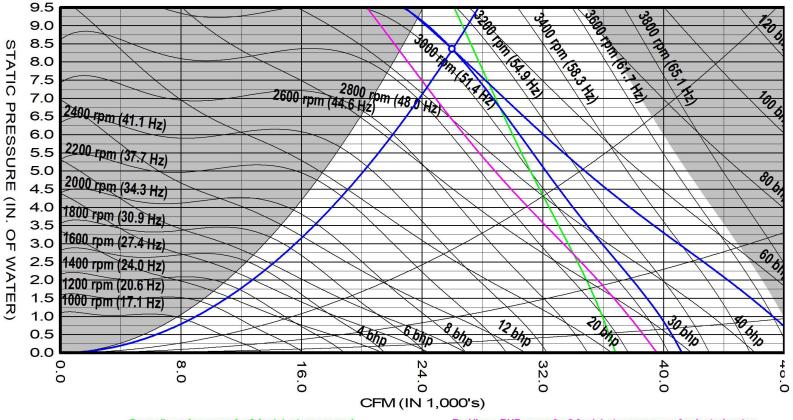
#### Notes

#### Important

- 1. This unit may not meet ASHRAE Standard 90.1 2007 fan motor power limitations for the year and system selected. If that code applies, alternate fan selections may be required.
- 2. The designer and installer must ensure compliance with applicable codes. A component supplier cannot determine the brake horsepower ("BHP") for other motors in the air handling system.
- 3. Before approving this unit, determine whether ASHRAE Standard 90.1 2007 has been adopted in the specific jurisdiction or contract specifications in which the unit will be installed.

BOBKVU UAMS CAMID 9 11/1/2024





Green line = fan curve for 3 fan(s) at max speed

Red line = BHP curve for 3 fan(s) at max power of selected motor

Fan Curve

AF 18 DD PLEN	AF 18 DD PLENUM 12BL (100% Width) 2x2 Supply Fan at Standard Conditions											
Air volume	26000	cfm	Fan speed		3065	rpm						
Total static	8.35	insVVg	Max speed		3650	rpm						
Fan Shaft Power	50.7	bhp	Efficiency		67.4	%						
Approx VFD Setting	52.5	Hz	Motor Speed		3500	rpm						
Fan Energy Index(FEI)	1.25		Redundancy		93.4	%						
Unit tagging	AHU-2			Date	November-0	01-2024						
Job name	UAMS CAMI	D		Time	07:13							

Supply fan performance is certified in accordance with the Central Station

Air-Handling Unit Certification Program, which is based on AHRI Standard 430.

Model: CAH064GDHM

Nov. 1, 2024

Ver/Rev:

All opening dimensions have a 1" mounting flange along the inner edge. The actual airflow area of the opening is 2" smaller in each dimension.

Sheet: 1 of 1

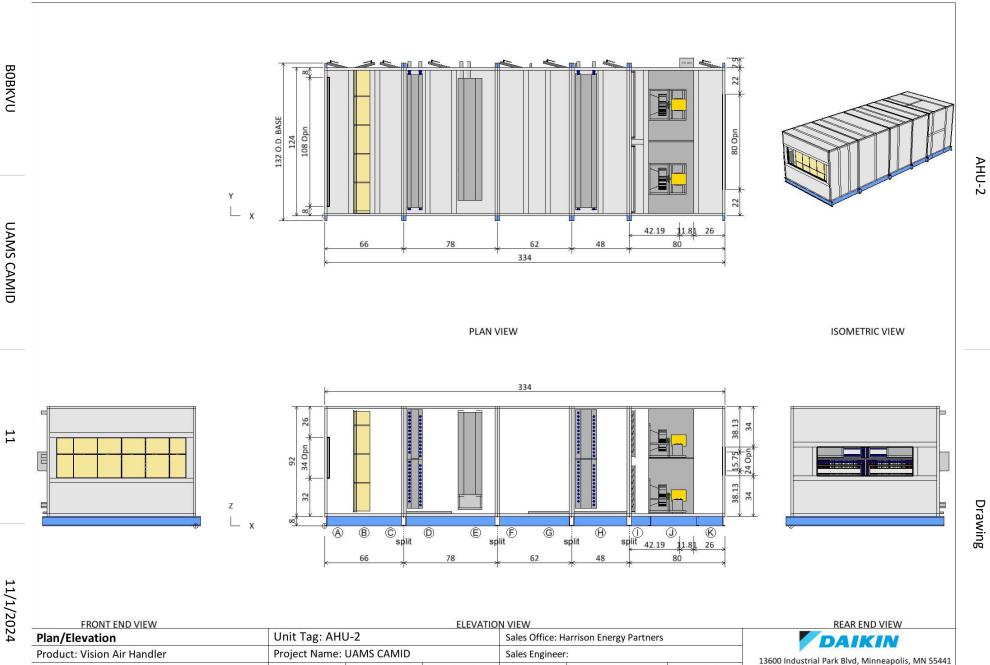
Scale: NTS

Tolerance: +/-0.25"

Dwg Units: in

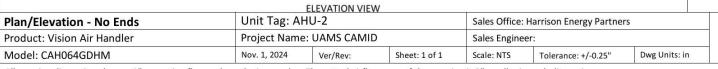
www.DaikinApplied.com

Software Version: 13.43



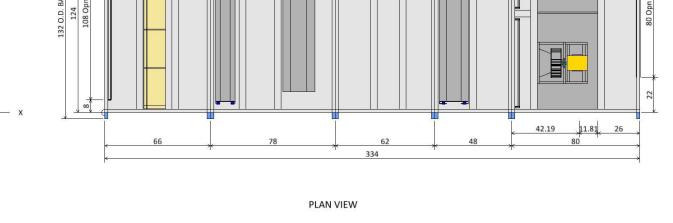


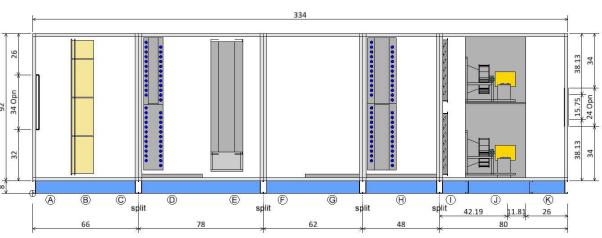
**BOBKVU** 



DAIKIN 13600 Industrial Park Blvd, Minneapolis, MN 55441 www.DaikinApplied.com Software Version: 13.43

All opening dimensions have a 1" mounting flange along the inner edge. The actual airflow area of the opening is 2" smaller in each dimension.





	Left Door (WxH):	18 ins x 88 ins
=	Access Section	
<u>C</u> )	Left Door (WxH):	18 ins x 68 ins
	Chilled Water coil	
0	Coil Model:	5WL1208B
رو	Total Capacity:	356299.0 Btu/h

Component Key

18 ins x 48 ins

Varicel VXL

Pleated (MERV 8)

Centrifugal - Plenum

20 ins x 48 ins

Left Door (WxH): 20 ins x 68 ins

Steam Face and Bypass Coi Total Capacity: 1546300.0 Btu/hr Access Section Left Door (WxH): 20 ins x 68 ins

Chilled Water coil 5WH0002C Coil Model: Total Capacity: 0.0 Btu/hr Left Door (WxH): 22 ins x 68 ins

Chilled Water coil Coil Model: 5WD0812B Total Capacity: 2244626.0 Btu/hr 20 ins x 68 ins Left Door (WxH):

(I) Damper Supply Fan Fan Type: Fan Size (Class):

Plenum Section Left Door (WxH):

Panel and Cartridge Filter Pre Filter Type:

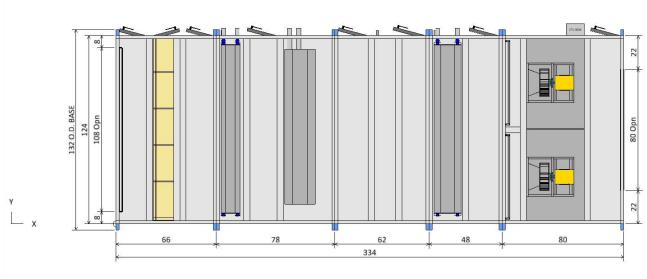
Cartridge Filter Type:

18 (2) Air Flowrate: 6500.0 cfm T.S.P: 8.3 insWg 15.0 HP Motor Power:

Plenum Section Left Door (WxH):

Drawing

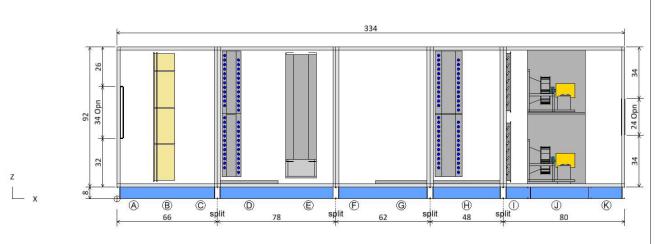
AHU-2



	Com	ponent k	(ey		
Туре	Х	Υ	Z	Wid	Hgt
Plenum Section     Opening	0.00	8.00	40.00	108.00	34.00
Plenum Section     Opening	334.00	22.00	42.00	80.00	24.00

Note: Dimensions are measured from the origin point. Note: Openings with or without dampers are recessed into the unit by approximately 1.75 in.

#### PLAN VIEW



EI	_EVA	ΓΙΟN	VIEW

Unit Tag: Al	Unit Tag: AHU-2			Sales Office: Harrison Energy Partners		
Project Name	Project Name: UAMS CAMID			Sales Engineer:		
Nov. 1, 2024	Ver/Rev:	Sheet: 1 of 1	Scale: NTS	Tolerance: +/-0.25"	Dwg Units: in	
	Project Name	Project Name: UAMS CAMI	Project Name: UAMS CAMID	Project Name: UAMS CAMID Sales Engine	Project Name: UAMS CAMID Sales Engineer:	

DAIKIN

13600 Industrial Park Blvd, Minneapolis, MN 55441 www.DaikinApplied.com Software Version: 13.43

All opening dimensions have a 1" mounting flange along the inner edge. The actual airflow area of the opening is 2" smaller in each dimension.



30"

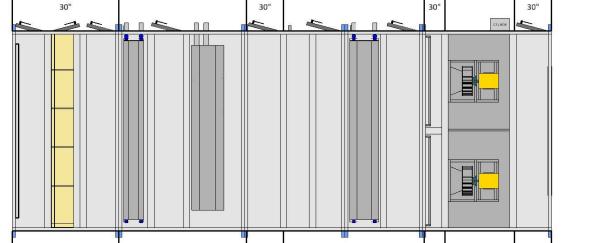
DAIKIN 13600 Industrial Park Blvd, Minneapolis, MN 55441 www.DaikinApplied.com Software Version: 13.43

All opening dimensions have a 1" mounting flange along the inner edge. The actual airflow area of the opening is 2" smaller in each dimension.

Notes

Check local electrical component service clearance codes for specific distances.

Access is only required on one side of the unit.



30"

124"

124"

124"

30"

124"

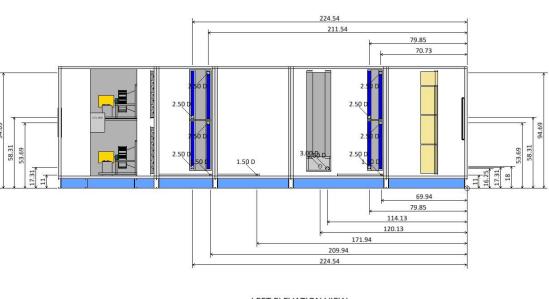
30"

124"

124"

Drawing

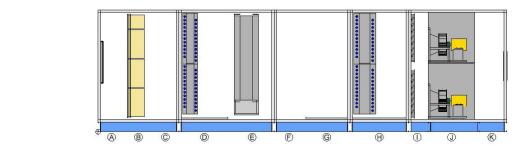
AHU-2



	Coil and D	rain Conn	ections		
	Туре	Х	Υ	Z	Diam
<b>(D)</b>	Chilled Water coil Condensate drain conn: Cold water inlet: Cold water outlet: Cold water inlet: Cold water outlet:	69.94 79.85 70.73 79.85 70.73	127.40 129.00 129.00 129.00 129.00	11.00 17.31 53.69 58.31 94.69	1.50 2.50 2.50 2.50 2.50
E	Steam Face and Bypass Coil Steam inlet: Steam outlet:	120.13 114.13	129.00 129.00	18.00 16.25	3.00 2.50
G	Chilled Water coil Condensate drain conn:	171.94	127.40	11.00	1.50
$\oplus$	Chilled Water coil Condensate drain conn: Cold water inlet: Cold water outlet: Cold water inlet: Cold water outlet:	209.94 224.54 211.54 224.54 211.54	127.40 129.00 129.00 129.00 129.00	11.00 17.31 53.69 58.31 94.69	1.50 2.50 2.50 2.50 2.50

Note: Dimensions are measured from the origin point.

**LEFT ELEVATION VIEW** 



RIGHT	<b>ELEVATION VIE</b>	W

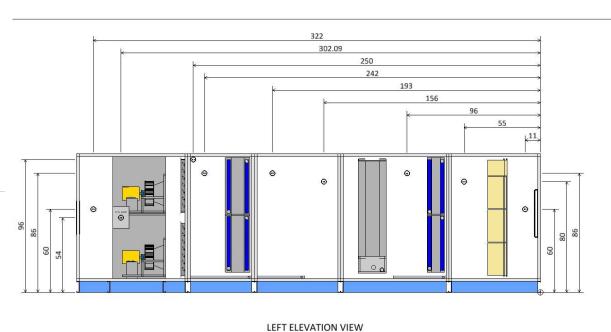
Unit Tag: Al	Unit Tag: AHU-2 Project Name: UAMS CAMID			Sales Office: Harrison Energy Partners Sales Engineer:		
Project Name						
Nov. 1, 2024	Ver/Rev:	Sheet: 1 of 1	Scale: NTS	Tolerance: +/-0.25"	Dwg Units: in	
	Project Name	Project Name: UAMS CAMII	Project Name: UAMS CAMID	Project Name: UAMS CAMID Sales Engine	Project Name: UAMS CAMID Sales Engineer:	



13600 Industrial Park Blvd, Minneapolis, MN 55441 www.DaikinApplied.com Software Version: 13.43

All opening dimensions have a 1" mounting flange along the inner edge. The actual airflow area of the opening is 2" smaller in each dimension.

AHU-2



		Com	ponent Ke	ey		
	Туре	Х	Y	Z	Volts	Phase
(A)	Plenum Section LED Marine Light	11.00	124.00	60.00	110	1
©	Access Section LED Marine Light	55.00	124.00	80.00	110	1
<b>(D)</b>	Chilled Water coil LED Marine Light	96.00	124.00	86.00	110	1
(F)	Access Section LED Marine Light GFI	156.00	124.00	80.00	110	1
<b>©</b>	Chilled Water coil LED Marine Light GFI	193.00	124.00	86.00	110	1
$^{\odot}$	Chilled Water coil LED Marine Light UVC Light	242.00 250.00	124.00 122.00	86.00 96.00	110 115	1
①	Supply Fan Fan	302.09	124.00	54.00	460	3
(K)	Plenum Section LED Marine Light	322.00	124.00	60.00	110	1

Note: Dimensions are measured from the origin point.

z				***************************************								
х	(A)	B	©	(D)	E L	Ē	©	$oldsymbol{eta}$	1	(J)	(K)	

<b>Electrical Connections</b>	Unit Tag: Al	Unit Tag: AHU-2			Sales Office: Harrison Energy Partners		
Product: Vision Air Handler	Project Name	Project Name: UAMS CAMID			Sales Engineer:		
Model: CAH064GDHM	Nov. 1, 2024	Ver/Rev:	Sheet: 1 of 1	Scale: NTS	Tolerance: +/-0.25"	Dwg Units: in	

13600 Industrial Park Blvd, Minneapolis, MN 55441 www.DaikinApplied.com Software Version: 13.43

All opening dimensions have a 1" mounting flange along the inner edge. The actual airflow area of the opening is 2" smaller in each dimension.

Drawing

22 22 22

**PBFILT** 

66

**ACCESS** 

PLENUM

92

Model: CAH064GDHM

42

CWC

78

36

IFB STC

Shipping Sections	Unit Tag: AHU-2	Sales Office: Harrison Energy Partners	
Product: Vision Air Handler	Project Name: UAMS CAMID	Sales Engineer:	

Ver/Rev:

38

CWC

62

24

ACCESS

48

CWC

48

Sheet: 1 of 1

42

FAN ARRAY

80

Scale: NTS

Tolerance: +/-0.25"

Dwg Units: in

24

PLENUM

14

5 MP ARRAY

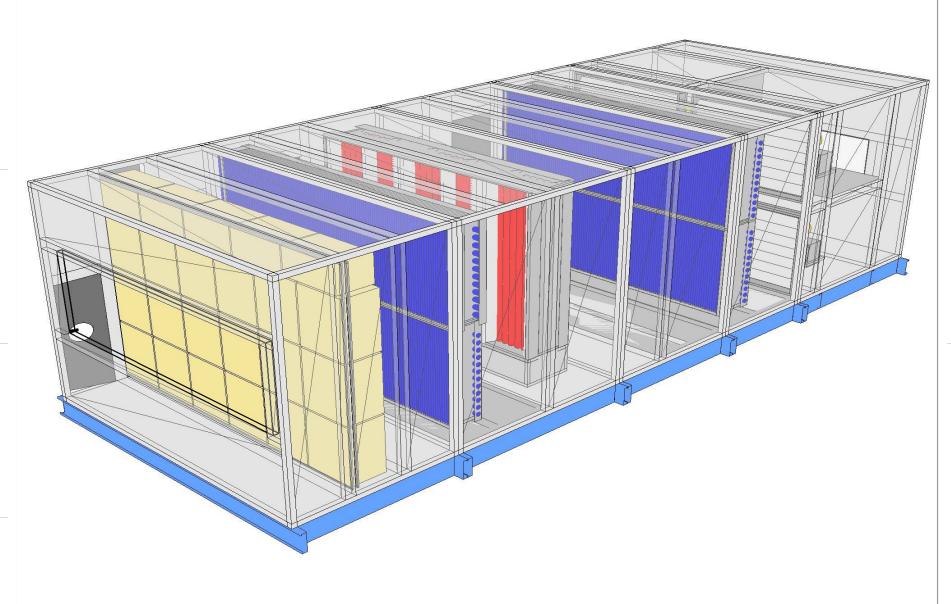
Shipping Sections									
	Section	Weight (	lb)X	Υ	Z				
	Section 1	1737.72	66	124	92				
	Section 2		78	124	92				
	Section 3		62	124	92				
	Section 4		48	124	92				
	Section 5		80	124	92				
	Total Unit	16685.55	334	124	92				

Note. base rails, curb ready base, coil conflectors, drain conflectors,
and control boxes not included in height X, Y, Z dimensions.
Shipping section may be 2" longer in air flow direction due to
internal splice joint.

DAI	KIN
13600 Industrial Park Blvd,	Minneapolis, MN 55441
www.DaikinApplied.com	Software Version: 13.4

All opening dimensions have a 1" mounting flange along the inner edge. The actual airflow area of the opening is 2" smaller in each dimension.

Nov. 1, 2024



Product Drawing	Unit Tag: AF	HU-2		Sales Office:	Harrison Energy Partner	rs	DAI	IKIN	
Product: Vision Air Handler	Project Name	: UAMS CAMI	D	Sales Engine	er:		13600 Industrial Park Blvd, Minneapolis, MN 5544:		
Model: CAH064GDHM	Nov. 1, 2024	Ver/Rev:	Sheet: 1 of 1	Scale: NTS	Tolerance: +/-0.25"	Dwg Units: in	www.DaikinApplied.com	Software Version: 13.43	
All opening dimensions have a 1" mounting	flange along the inner edge	The actual airfle	w area of the enenir	og is 2" smaller i	a each dimension				





# **SUBMITTAL DATA**

Job Name UAMS CAMID

For

Sold To

**Prepared For** 

**Customer PO#** 

Prepared By Jake Skinner

Date 11/1/2024

## **Table of Contents**

Daikin Section Divider	3
Technical Data Sheet - AHU-5 Stacked	4
Fan Curve - AHU-5 Stacked	15
Drawing - AHU-5 Stacked	17

Floor plan indicates coil connections on opposite sides on top vs. bottom unit. Submittal shows coil/piping connections on same side of unit for both units. Coordinate LH vs. RH connections for each AHU.

Please clarify if humidifier condensate drain cooler shall be submitted here or separately.

## AHU-5 Stacked

## **Technical Data Sheet**

Job Information		Technical Data Sheet
Job Name	UAMS CAMID	
Date	November 01 2024	
Submitted By	JS	
Software Version	13.43	
Unit Tag	AHU-5 Stacked	



Unit Overview	Unit Overview												
	Supply							Return/Exhaust					
Model Number	Air	Static P	ressure	Exteri	External Dimensions			Static Pressure		External Dimensions			
Wiodel Hamber	Volume	External Total		Height	Width	Length	Volume	<b>External</b>	Total	Height	Width	Length	
	cfm	inWc	inWc	in	in	in	cfm	inWc	inWc	in	in	in	
CAH011GDGM	3870	3.00	6.90	52*	48*	304	3870	3.00	7.07	52*	48*	304	
*Not including base ra	ails coil con	nectors drai	in connector	rs and contro	nl hoves								

Unit									
Model Number:	CAH011GDGM								
Approval:	ETL Listed / ETL Listed to Canadi	ETL Listed / ETL Listed to Canadian Safety Standards (ETL Label / ETLc Label)							
Construction:	High pressure low leakage construction								
Outer Panel:	24 gauge G90 Galvanized Steel (unpainted)								
Liner:	24 gauge Galvanized Steel (unle	ss noted per section)							
Insulation:	R-13 Injected Foam								
Unit Configuration:	Stacked with parallel air flows	Drive (Handling) Location:	Right						
Base:	8" formed channel Wall Thickness: 2 in								
Altitude:	0 ft	Parts Warranty:	Standard One Year						

Plenum Section	Component: 1	Length: 24 in		Shipping Section: 1					
		Air Pressure Drop							
		0.12 inWc							
Custom Openings									
Custom Opening	Location	Width	Height	Rainhood w/Screen					
1	End	20 in	20 in	None					
		Door							
Location		Width		Opening					
Drive side	:	20 in		Outward					

Access Section Compone	nt: 2	Length: 24 in	Shipping Section: 1						
	Air Press	ure Drop							
0.00 inWc									
	Do	or							
Location	Wi	dth	Opening						
Drive side	20	in	Outward						

Clarify if inlet air isolation dampers are provided with units or by others.

Combinati	on Filter		Component: 3		Leng	th: 16 in		Shipping :	Shipping Section: 1			
	Access		Face	Velocity		Face A	rea		Air Volume			
	Front 558 ft/min					6.9 f	t²		3870 cfm			
Portion	Туре	Efficiency		Air Press	ure Drop		Number of	Height	Width	Depth		
			Clean Air	Mean Air	Dirty Air	User Spec	Filters					
Pre-Filter	Pleated	MERV 8	0.27 inWc	<b>0.63</b> inWc	1.00 inWc	N/A	1	24 in	24 in	2 in		
rie-riitei	rieateu	IVIERVO	U.Z7 ITIVVC	<b>0.03</b> INVVC	1.00 mvvc		1	20 in	24 in	2 in		
Filter	Varicel VXL	MERV 15	0.45 inWc	<b>1.22</b> inWc	2.00 inWc	N/A	1	24 in	24 in	12 in		
riitei	cartridge	IVIERV 13	0.43 INVVC	1.22 INVVC	2.00 invvc	IN/A	1	20 in	24 in	12 in		
	Special Options											
		Sound B	affle			Filter Gauge						
		(As casing	details)			Minihelic II 0-5"						

Access Section	Component: 4	Length: 22 in	Sh	Shipping Section: 1		
		Air Pressure Drop				
		0.00 inWc				
		Door				
Location	Width	Opening	Window Type	Light		
Drive side	14 in	Outward	Round	LED marine light kit and switch only		

Chilled Water (	Coil	Component: 5		Length: 28 in		Shipp	Shipping Section: 1			
Coil Model	Total Capacity	Sensible Capacity	Number of Coils	Number of Row	s Fins per In	ch Tube	Diameter	Tube Spacing (Face x Row)		
5WL1208B	54152 Btu/hr	54152 Btu/hr	1	8	12	0	.625 in	1.50 in x 1.299 in		
Air Volume	Entering Dry Bulb Wet		Leaving Wet Bulb	Coil Air Pressure Drop	Finned Height	Finned Length	Face Are	ea Face Velocity		
3870	99.6°F 77.		73.7 ℃	0.56 inWc	42 in	35 in	10.21 f	t <sup>2</sup> 379 ft/min		
Entering	Fluid Leaving	Flow Ra	te <b>F</b> ressur	re Drop	Velocity	Volur	ne	Weight		
( \85.9 °F	89.1 °F	35.10 gr	om 4.60	0 ftHd 1.80 ft/s		12.0	gal	103.00 lb		
Туре	Connection [I Size	Data Per Coil] Location	Material	Glycol Type	Glycol Type Min. Fin Surface Temp.		Tube Wall ace Temp.	Fouling Factor		
Threaded	2.50 in	Drive side	Carbon steel	Propylene (30%)	25 U °E		35.9°F	0.000		
Fin	Tube	Material Header	r Ca	se	Drain Pan		Side	Turbospiral		
Aluminum .0075	Copper .020	) in Coppe	r Galv.	steel Stainless steel		Drive:	side	Yes		
	Yuu		AHRI 410 C	ertification						
			Coil is NOT cer	tified by AHRI						
			lo o	or						
Loca	ion	Wid	lth	0	pening			ght		
Drive side 8 in				Outward			LED marine light kit and switch only			
HRC coil sha minimum 0.0 per schedule.	35" thick		RC coil meets . Include per Гур.							

Location

Drive side

## **Technical Data Sheet**

Light

LED marine light kit and switch

only

IFB Steam Coil	Cor	mponent: 6		Length: 36 in Shipping Section: 2					
Coil Model	Total Capacity	Number of C	oils Number	of Rows Fir	ns per Inch	Tube Diameter	Tube Spacing (Face x Row)		
HMX8AS45.927.02	240300 Btu/hr	1	2	2	8	0.625 in	1.50 in x 1.299 in		
Air Volume	Air Temperat Entering Dry Bulb	ture Leaving Dry Bulb	Coil Air Pressure Drop	Finned Height	Finned Length	Face Area	Face Velocity		
3870 cfm	17.6 °F	75.1 °F	0.17 inWc	43 in	27 in	8.05 ft²	488 ft/min		
		Fluid			Max.	x. Superheat Temp. in Steam Coil Inlet			
Stear	m Pressure		Condens	ate Load					
15	.00 psig		248.6	8 lb/hr		30.0 °	F		
			Connection [	Data Per Coil]					
Туре		eam Size	Condens		Location		Material		
Threaded		2.50 in	2.50	0 in	Drive side		Carbon steel		
			Mate	erial					
Fin		Tube			ader	Case			
Aluminum .0	0075 in	Copper .	035 in Carbon Steel			G	alv. steel		
Access Section	Cor	mponent: 7		Length: 24 in		Shipping Section	on: 2		
			Air Pressi	ure Drop					
			0.00	inWc					
			Do	or					
Location		Width	Орег	ning	Window Typ	e	Light		
Drive side		16 in	Outv	vard	Round	LED n	narine light kit with GFI outlet		
Future Chilled Wa	<b>ter Coil</b> Cor	mponent: 8		Length: 28 in		Shipping Section	on: 2		
	Number of Co	oils			Numb	er of Rows			
	1					2			
Coil Air Pressure Dr	rop Finr	ned Height	Finned	Width	Face Area		Face Velocity		
0.10 inWc		42 in	35	in	10.21 ft²		379 ft/min		
	Connection Loc					tion Material			
	Drive side	е			Carb	on steel			
1.1	il Model		Drain			<b>Drain Pan Side</b> Drive side			
Future Coil	I (Not Supplied)		Stainles	ide					
			AHRI 410 C						
			Coil is NOT cer	tified by AHRI					
			Do	or					

Humidifier Section. Humidifier manifold to be factory installed. Performance data is located at the end of this submittal.

Opening

Outward

Width

14 in

BOBKVU UAMS CAMID 6 11/1/2024

		AHU-5	Stacke	ed					Tech	nical [	Data Sh	eet		
Chilled Wate	r Coil		Compo	onent: 9			Length: 40	in			Shipping	ing Section: 2		
Coil Model	To	otal Capacity	Sensib	le Capacity	Numb	er of Coils	Number of	lumber of Rows		Fins per Inch Tub		Tube Diameter		Tube Spacing (Face x Row)
5WH1008C	32	.6506 Btu/hr	1980	84 Btu/hr		1	8		10		0.62	25 in	1.5	0 in x 1.299 in
Air Volume			Air Tem	perature			Coil Air		Finned	Finn	ied	Vel		Face
		Entering			Leaving		Pressure		Height	Len	yth			Velocity
2070 -	Dry B		t Bulb	Dry Bulb		Net Bulb	Drop		40.	٥٦				070
3870 cfm	99.6		.2 °F	52.8 °F		52.6 °F	1.21 inW	-	42 in	35	in	10.21	ft²	379 ft/min
	Water F				te	Pressu	re Drop	'	Velocity		Volume			Weight
Entering 45.0 °F		Leaving 60.1 °F		42.20		0.00	) ftHd	2	3.30 ft/s		12.0		101.00 lb	
43.0 4				43.30 g <sub>l</sub>	om	0.90	TIHO	_			12.0 ga			
Туре		Conne	Connection [Data Per Coil] Size Location M						Fin Surface Temp.		in. Tube V ırface Ter		FO	uling Factor
Threaded		2.00 in		Drive si			n steel 45.0 °F		•	30	45.0°F	ııp.	0.000	
medded		2.00 111		Material	uc	ourbo	11 31001		Dra				D.	ain Side
Fin		Т	ube	iviateriai	Head	er	Case			Diaiii	Diamir an			alli side
Aluminum .0	075 in	Coppe	r .020 ir	1	Copr	er	Galv			Stainless steel			Drive side	
							Certification							
	_ C	ertified in a	ccordar	nce with th	e AHR			Air-Co	oling and A	ir-Hea	tina Coi	s Certi	ficati	on Program
CERTIFIEL www.ahridinectory.or Air-Dooling and Air-Heating Colle AirB Standard 410	D <sub>10</sub>	which is ba	sed on	AHRI Stan	dard 4	10 within	the Range	of Sta	ndard Ratin I Directory	ig Cond	ditions I	sted in	Tab	•
						Do	oor							
Locat	ion		Wi	dth		Оре	ening		Window	/ Туре			Liç	<b>jht</b>
Drive	side		20	) in		Out	ward		Rou	Round LED r		LED ma	arine	light kit and
TSP is no	early	1.5" les	s tha	n								9	witc	h only
schedule														
Return/Exha	ust Fa	n	Compo	<del>oner</del> it: 10			Length: 38	in			Shipping	Section	3	

Loca	tion		Width				Opening				Window Type			Light		
Drive	side		20	in		Outward					Round	b		LED marine light kit and		
TSP is n	early 1.5"	less	s thar	1										swite	ch only	
schedule															J	
Return/Exh			Compo	<del>ner</del> it:	10			Length:	: 38 in			:	Shippir	ng Section: 3		
							Fan Perf	ormance								
Air Volume			Total I Pow		Fan Sha Powe			Spe	Outlet Velocity							
	abinet		ex(FEI)					Operat	ing	Maximum						
3870 cfm	3.00 inWc	7.07	inWc	0.0	0 inWc	1.	.11	6.2 kW		6.95 B	HP :	3199 r	pm	3650 rpm	0 ft/min	
							Fan	Data								
Fan Type	Blade Type A	/ Non	ninal Fan	Size	Quantity o	of Fans	Wheel [	Diameter	Mate	rial Type		ber of ides		Discharge	Motor Location	
Centrifugal - Plenum	Airfoil / 2		DDPL16	)	1		15.	75 in	Alur	minum	1	2		Axial	Behind Fan	
							Moto	r Data								
Power	Electrical Supply	Spe	eed	Effi	iciency	Encl	losure	Frame	Size	Suppli	er I	Numbe Pole:		Lock Rotor Current	Full Load Current	
10.0 HP	460/60/3 V/Hz/Phase	3500	O rpm	Pre	emium	0	DP	213 T f	frame	Gener	ric	2		74.01 A	12.00 A	
							Fan O	ptions								
	Piezomete	r Ring:	Provid	ded o	n Drive	Side F	an			Piezom	eter Delta	a P:	6.87			
	Shaft Groundi	ng Kit:	Provid	ded						Is	olator Ty	pe:	Sprin	q		
						VFD/S	Starter/D	)isconnec	t Data		•		•	3		
	Selection	Type:	Exterr	nal I-I	Box						Vend	dor:	Facto	ry Standard		
		ower:	10 HP		2011						Volta		460 v	•		
н	eight x Width x [			<b>1</b> 1 X 6.1	00 in x 4.	00 in					Mount	•	Door			
Enclosure: NEMA 1												9.	200.	0.00		
			112.1	• •			Do	oor								
	Location							idth						Opening		
	Drive side	<u>;</u>					22	2 in						Outward		
	Please c	larify	y VFC	s a	ire			Recommend inward opening access								
	provided					s.		doors on positiver pressure sections. Typ.								
В	RIMD1			_	MS CAI			acoi :	5 011	7	ivei p	,, 03.	Suit	11/1/2		

switch only

		AU0-2 219	ickeu				recinic	ai Data S	meet						
Plenum Se	ection	C	omponent: 11		Lengt	Length: 24 in Shipping Section: 3									
				<u> </u>	Air Pressure Drop										
					0.05 inWc										
				(	Custom Dampe	rs									
Custom Dan	nper Damp	er Type	Location	Siz	e (Width x Hei	ght)	Material	Blad	le Action	Rainh	ood w/Scree				
				Overa		pening									
1	CBD	6-OUT	End	32 in x 1	6 in 29	in x 13 in	Alum	Pa	None						
					Door										
Lo	cation		Width		Opening		Window Typ	ре		Ligh	t				
Dri	ve side		20 in		Outward		Round			ine li vitch	ght kit and only				
Plenum Se	ection	C	omponent: 12		Lengt	h: 24 in		Shippii	ng Section: 4	ļ					
				P	ir Pressure Dro	pp									
					0.12 inWc										
				C	ustom Openin	gs									
Custor	m Opening		Location		Width		Height		Rainh	nood w	//Screen				
	1		End		20 in		20 in			Non	е				
					Door										
	Locatio	n			Width	Opening									
	Drive s	ide			20 in		Outward								
Access Se	ction	C	omponent: 13			h: 24 in		Shippi	ng Section: 4						
				P	Air Pressure Dro	pp									
					0.00 inWc										
					Door				0						
	Locatio				Width				Opening						
	Drive s	iue			20 in				Outward						
Combinat	ion Filter	C	omponent: 14		Lengt	h: 16 in		Shippii	ng Section: 4	ļ					
	Access		Face	Velocity		Face .	Area		Air Vo	olume					
	Front		558	3 ft/min		6.9	ft²		387	0 cfm					
Portion	Туре	Efficiency		Air Press	sure Drop		Number of	Height	Widt	th	Depth				
			Clean Air	Mean Air	Dirty Air	User Spec	Filters								
Pre-Filter	Pleated	MERV 8	0.27 inWc	<b>0.63</b> inWc	1.00 inWc	N/A	1	24 in	24 i		2 in				
			2.27	2.30		,,	1	20 in	24 i		2 in				
Filter	Varicel VXL	MERV 15	0.45 inWc	<b>1.22</b> inWc	2.00 inWc	N/A	1	24 in	24 i		12 in				
	cartridge		0110				1	20 in	24 i	n	12 in				
					Special Option	S									
		Sound Bat						er Gauge							
		(As casing d	etails)				Magn	ehelic 0-	o"						
Access Sec	ction	C	omponent: 15		Lengt	h: 22 in		Shippi	ng Section: 4	ļ					
				P	Air Pressure Dro	op									
					$0.00\mathrm{inWc}$										
					Door										
	cation		Width		Opening					Light					
Dri	ve side		14 in		Outward		Round		LED marine light kit and						

	,	AHU-5	Stacke	d			Technical Data Sheet							
Chilled Water	Coil		Compo	onent: 16			Length: 28	in		Sł	nipping Section: 4			
Coil Model	Total Ca	apacity	Sensibl	le Capacity	Numb	er of Coils	Number of	f Rows	Fins per Inc	h 1	ube Diameter	Tube Spacing (Face x Row)		
5WL1208B	54152	Btu/hr	5415	52 Btu/hr		1	8		12		0.625 in	1.50 in x 1.299 in		
Air Volume			Air Temp				Coil Air		Finned	Finned	Face Area			
		itering	D. III		Leaving		Pressure Drop	•	Height	Length		Velocity		
3870 cfm	<b>Dry Bulb</b> 99.6 °F	Wet 77.		Dry Bulb 86.8 °F		Wet Bulb 73.7 °F	0.56 inW	lo.	42 in	35 in	10.21 ft	<sup>2</sup> 379 ft/min		
3670 (1111	Fluid	//.	2 F	Flow Rat							olume			
Entering		Leaving		Flow Rai	re Drop		Velocity	V	olume	Weight				
85.9 °F		89.1 °F		35.10 gr	om	4.60	) ftHd		1.80 ft/s	1:	2.0 gal	103.00 lb		
	Cor	nection [I	Data Per	٥.			Glycol T	уре	Min. Fin Surfa		/lin. Tube Wall	Fouling Factor		
Туре	Siz	ze	Lo	cation	М	aterial			Temp.	:	Surface Temp.	Ü		
Threaded	2.5	0 in	Driv	ve side	Carb	on steel	Propyle (30%		85.9°F		85.9°F	0.000		
			Materi	al				[	Orain Pan	Dra	ain Side	Turbospiral		
Fin		Tube		Header			ase							
Aluminum .007	5 in Cop	per .020	) in	Coppe	r		. steel	Stai	nless steel	Dri	ve side	Yes		
							Certification							
					Coil	is NOT ce	rtified by <i>P</i>	AHRI						
						Do	oor							
	cation			Wic					ening		Lig			
Driv	ve side			8 i	in			Out	tward	Ll	D marine ligh or	t kit and switch lly		
Manual Comp	onent		Compo	onent: 17			Length: 36	in		Sł	nipping Section: 5			
						Pressu	re Drop							
						0.00	) inWc							
						Pa	inel	_						
	Location					Wi	idth				Opening			
Re	emovable	panels				-	in				Outward			
Access Section	n		Compo	onent: 18			Length: 24	in		Sł	nipping Section: 5			
						Air Press	sure Drop							
						0.00	) inWc							

Access Section	Component: 18	Length: 24 in		Shipping Section: 5			
		Air Pressure Drop					
		0.00 inWc					
		Door					
Location	Width	Opening	Window Type	Light			
Drive side	16 in	Outward	Round	LED marine light kit with			
				GFI outlet			

IFB Coil Section.

IFB coil in this section will be identical to the IFB coil in the bottom section of the air handler (component 6)

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Chilled Water	Coil		Compone	ent: 20			Length: 40 in				Shipping Section: 5			
Coil Model	Total C	apacity	Sensible (	Capacity	Number of Coils		Number of Rows		Fins	per Inch	Tube	Diamete	r	Tube Spacing (Face x Row)
5WH1008C	32650	6 Btu/hr	198084	4 Btu/hr	1		8		10		0.	625 in	1.5	50 in x 1.299 in
Air Volume		- 1	Air Temper	rature		Coil Air Finn		Finned	d Finned		Face Area		Face	
	Er	ntering		L	eaving		Pressure		Height	Le	ength			Velocity
	Dry Bulb	Wet I	Bulb	Dry Bulb	١	Wet Bulb	Drop							
3870 cfm	99.6 °F	77.2	2 °F	52.8 °F	52.6 °F		1.21 inW	С	42 in	3	85 in	10.2	1 ft²	379 ft/min
	Water		Flow Rate			Pressu	re Drop	V	/elocity		Volum	ie		Weight
Entering		Leaving												
45.0 °F		60.1 °F		43.30 gpm			) ftHd	3	.30 ft/s		12.0 g	jal		101.00 lb
		Connect	tion [Data	on [Data Per Coil]				Min. Fin Surf			rface Min. Tube		Fo	ouling Factor
Туре		Size		Location		Mat	erial		Temp.		Surface To	e <b>mp</b> .		
Threaded		2.00 in		Drive sid	le	Carbo	n steel	4	45.0 °F		45.0 °			0.000
			Material							Drain Pan			D	rain Side
Fin		Tul	ube Hea			ler	С	ase						
Aluminum .00	75 in	Copper	r .020 in Copper			per	er Galv. stee			eel Stainless steel			Dr	ive side
						ALIDI 440 0								

#### **AHRI 410 Certification**



Certified in accordance with the AHRI Forced-Circulation Air-Cooling and Air-Heating Coils Certification Program which is based on AHRI Standard 410 within the Range of Standard Rating Conditions listed in Table 1 of the Standard. Certified units may be found in the AHRI Directory at www.ahridirectory.org

		Door		
Location	Width	Opening	Window Type	Light
Drive side	20 in	Outward	Round	LED marine light kit and switch only

Humidifier Section.
Humidifier manifold to be factory installed. Performance data is located at the end of this submittal.

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Note					-											
Name	Supply Fan			Compo	nent	: 21			Length: 38 in Shipping Section: 6							
Nominal Family   Nomi								Fan Perf	ormance							
3870 cfm   3.00 inwc   6.90 inwc   0.00 inwc   1.11   6.1 kW   6.79 BHP   3174 rpm   3650 rpm   0 ft/mit	Air Volume		Static F	Pressure						-				Spe	ed	Outlet Velocit
Fan Type   Blade Type / Class   Nominal Fan Size   Quantity of Fans   Wheel Diameter   Material Type   Number of Blades   Discharge   Motor Loca   Centrifugal - Airfoil / 2   DDPL16   1   15.75 in   Aluminum   12   Axial   Behind F  Power   Electrical   Speed   Efficiency   Enclosure   Frame Size   Supplier   Number of Poles   Current   Current   10.0 HP   460/60/3   3500 rpm   Premium   ODP   213 T frame   Generic   2   74.01 A   12.00    Plezometer Ring   Provided on Drive Side Fan   Piezometer Delta P:   6.87   Shaft Grounding Kit:   Provided   Isolator Type:   Spring    VFD/Starter/Disconnect Data    Selection Type:   External J-Box   Vendor:   Factory Standard   460 V   Height x Width x Depth:   6.00 in x 4.00 in   Mounting:   Door Side    Location   Drive Side   Door   Outward    Normal Fan Size   Munipur of Blades   Motor Loca   Motor Loca   Motor Data    Namber of Blades   Number of Roll and Behind F  Poles   Current Current   Pful Loca   Current Current   Current   Current   Current   Provided on Drive Side Fan   Piezometer Delta P:   6.87   Spring   Spring    VFD/Starter/Disconnect Data    Nematical Type   Spring    VFD/Starter/Disconnect Data    Nematical Type   Number of Loca   Normal Roll and Behind F  Number of Blades   Number of Roll and Behind F  Number of Blades   Number of Roll and Behind F  Poles Current   Cuck Rotor   Pful Loca   Current   Number of Roll and Behind F  Provided   Drive Side   Supplier   Number of Roll and Behind F  Number of Roll and Behind F  Poles Current   Cuck Rotor   Poles Cuck Rotor   Cuck Rotor   Poles Current   Cuck Rotor   Poles Current   Cuck Rotor   Poles Current   Cuck Rotor   Poles Current   Cuck Rotor   Poles Cuck Rotor   Cuck Rotor   Po		External	To	otal	С	abinet						(	Operati	ng	Maximum	
Centrifugal -   Airfoil / 2   DDPL16   1   15.75 in   Aluminum   12   Axial   Behind F	3870 cfm	3.00 inWc	6.90	inWc 0.00 inWc 1.11					6.1	kW	6.79 BI	HP 3174 rpm			3650 rpm	0 ft/min
Centrifugal - Airfoil / 2 DDPL16 1 15.75 in Aluminum 12 Axial Behind F Plenum    Power   Electrical Supply   Supply   Supply   Supply   Supply   Premium   ODP   213 T frame   Generic   2   74.01 A   12.00								Fan	Data							
Plenum    Power   Electrical Supply   Speed   Efficiency   Enclosure   Frame Size   Supplier   Number of Poles   Current   Current	Fan Type		/ Nor	minal Fan	Size	Quantity of	of Fans	Wheel [	Diameter	Mate	rial Type				Discharge	Motor Location
Power   Electrical   Speed   Efficiency   Enclosure   Frame Size   Supplier   Number of Poles   Current   Current	_	DDPL16	· )	1		15.	75 in	Alur	minum	1.	2		Axial	Behind Fan		
Supply 460/60/3 3500 rpm Premium ODP 213 T frame Generic 2 74.01 A 12.00  Fan Options  Piezometer Ring: Provided on Drive Side Fan Piezometer Delta P: Spring  VFD/Starter/Disconnect Data  Selection Type: External J-Box Vendor: Factory Standard VFD Power: 10 HP Voltage: 460 v Height x Width x Depth: 6.00 in x 6.00 in x 4.00 in Mounting: Door Side  Location Drive Side 2 in Opening  Drive Side ODP 213 T frame Generic 2 74.01 A 12.00  Poles Current Curre								Moto	r Data							
Fan Options  Piezometer Ring: Provided on Drive Side Fan Piezometer Delta P: 6.87  Shaft Grounding Kit: Provided Isolator Type: Spring  VFD/Starter/Disconnect Data  Selection Type: External J-Box Vendor: Factory Standard  VFD Power: 10 HP Voltage: 460 v  Height x Width x Depth: 6.00 in x 6.00 in x 4.00 in Mounting: Door Side  Enclosure: NEMA 1  Door  Location Width Opening  Drive side 22 in Outward	Power		Sp	eed	Ef	ficiency	Encl	losure	Frame	Size	Supplie	er N				Full Load Current
Piezometer Ring: Provided on Drive Side Fan Piezometer Delta P: 6.87  Shaft Grounding Kit: Provided Isolator Type: Spring  VFD/Starter/Disconnect Data  Selection Type: External J-Box Vendor: Factory Standard VFD Power: 10 HP Voltage: 460 v  Height x Width x Depth: 6.00 in x 6.00 in x 4.00 in Mounting: Door Side  Enclosure: NEMA 1  Door  Location Width Opening  Drive side 22 in Outward	10.0 HP		350	0 rpm	pm Premium		C	DP	213 T f	rame	Gener	ic	2		74.01 A	12.00 A
Shaft Grounding Kit: Provided Isolator Type: Spring  VFD/Starter/Disconnect Data  Selection Type: External J-Box Vendor: Factory Standard  VFD Power: 10 HP Voltage: 460 V  Height x Width x Depth: 6.00 in x 6.00 in x 4.00 in Mounting: Door Side  Enclosure: NEMA 1  Door  Location Width Opening  Drive side 22 in Outward								Fan O	ptions							
VFD/Starter/Disconnect Data		Piezometei	Ring:	Provid	ded	on Drive	Side F	an			Piezome	eter Delta	P: 6	5.87		
Selection Type:         External J-Box         Vendor:         Factory Standard           VFD Power:         10 HP         Voltage:         460 V           Height x Width x Depth:         6.00 in x 6.00 in x 4.00 in         Mounting:         Door Side           Enclosure:         NEMA 1         Opening           Location         Width         Opening           Drive side         22 in         Outward		Shaft Groundin	ng Kit:	Provid	ded						ls	olator Ty <sub>l</sub>	oe: S	Spring	)	
VFD Power:         10 HP         Voltage:         460 V           Height x Width x Depth:         6.00 in x 6.00 in x 4.00 in         Mounting:         Door Side           Enclosure:         NEMA 1           Door         Vidth         Opening           Drive side         22 in         Outward							VFD/S	Starter/D	isconnect	Data						
VFD Power:         10 HP         Voltage:         460 V           Height x Width x Depth:         6.00 in x 6.00 in x 4.00 in         Mounting:         Door Side           Enclosure:         NEMA 1         Door           Location         Width         Opening           Drive side         22 in         Outward		Selection	Type:	Exterr	nal J	-Вох						Vend	or: F	acto	ry Standard	
Enclosure:         NEMA 1           Door         Opening           Location         Width         Opening           Drive side         22 in         Outward		VFD P	ower:	10 нр								Volta			,	
DoorLocationWidthOpeningDrive side22 inOutward	Height x Width x Depth: 6.00 in					.00 in x 4.	.00 in					Mountii	ng: [	Door :	Side	
LocationWidthOpeningDrive side22 inOutward		Encl	osure:	NEMA	<b>1</b>											
Drive side 22 in Outward							Door									
		Location												Opening		
		Drive side					22 in					Outward				
Planum Continum Component, 22 Longth, 24 in Chinning Continue 4																

Plenum Section	1	Component: 22		Length: 24 in	Shipping Section: 6					
			Air Press	ure Drop						
			0.05	inWc						
			Custom	Dampers						
<b>Custom Damper</b>	Damper Type	Location	Size (Widt	h x Height)	Material	Blad	e Action	Rainhood w/Screen		
			Overall	Opening						
1	CBD6-OUT	End	32 in x 16 in	29 in x 13 in	Alum	Pa	rallel	None		
			Do	oor						
Location	Location Width Opening Window Type Ligh									
Drive sid	е	20 in	Out	ward	Round		LED marine light kit and switch only			

Unit Sound P	ower (dB)							
Туре	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz
Radiated:	84	75	66	74	68	62	51	51
Unit Discharge:	84	77	75	82	81	81	80	71
Unit Return:	84	75	66	74	68	62	51	51

BOBKVU	UAMS CAMID	11	11/1/2024
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Shippi	ng Se	ectio	on I	Deta	ails												
Section	on			ngth			ight						eights (lb)			enter of Gravity	•
				in			lb		P1		P2		P3	P4	XX	YY	ZZ
1			1	14		14	41		282		25	6	439	465	71	23	30
2			1	28		18	43		472		44	8	451	474	64	23	28
3			6	52		7	71		232		22	8	154	157	25	24	27
4			1	14		12	49		234		20	8	391	417	74	23	33
5			1	28		12	255		253		22	9	376	399	79	23	32
6			6	52		6	77		208		20	5	130	134	24	24	30
<b>Entire</b>	Unit		3	04		72	36		n/a		n/	а	n/a	n/a	n/a	n/a	n/a
				level	only												
	24		114 16	22	28	36	24	128 28	40	38	24		YY ( <del>)</del>				<del></del>
	4 P	Ą	D	Þ		5 3	A			6	P		↑ ¥ P2				Р3
52	PLENUM	ACCESS	PBFILT	ACCESS	CWC	MANUAL	ACCESS	CWC	CWC	FAN	PLENUM	52			Air Flow	<b>→</b>	
	D.												P1				P4
	PLENUM	ACCESS	PBFILT	ACCESS	CWC	IFB STC	ACCESS	CWC	CWC	FAN	PLENUM	(,,	Q		Plan View		
52	M	ESS	II.	ESS	ি ক	STC	ESS	ি ন	VC.	ź	M	52	L	→ xx	Plan View		
z <sub>.</sub> x	24	24	16	22	28	36	24	28	40	38	24	-					
	2.1		114	LL	20	30		128	70	62		-					

NOTE: Special components aren't included in the corner weights and center of gravity data.

NOTE: Shipping weights listed do not include weight of water (listed in coil section(s) above.

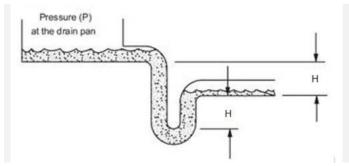
# Shipping Protection

None

Supply Static Pressure Drop		
Component	Option	Static Pressure Drop
Plenum Section	Plenum Section	0.12 insWg
Access Section	Access Section	
Panel and Cartridge Filter	Panel and Cartridge Filter	1.86 insWg
Access Section	Access Section	
Chilled Water coil	Chilled Water coil	0.56 insWg
Manual Section	Manual Section	
Access Section	Access Section	
Chilled Water coil	Chilled Water coil	0.10 insWg
Chilled Water coil	Chilled Water coil	1.21 insWg
Supply Fan	Cabinet	
Plenum Section	Plenum Section	0.05 insWg
External Static	External Static	3.00 insWg
Total Suppl	y Fan Static	6.90 insWg

Exhaust Static Pressure Drop		
Component	Option	Static Pressure Drop
Plenum Section	Plenum Section	0.12 insWg
Access Section	Access Section	
Panel and Cartridge Filter	Panel and Cartridge Filter	1.86 insWg
Access Section	Access Section	
Chilled Water coil	Chilled Water coil	0.56 insWg
Steam Face and Bypass Coil	Steam Face and Bypass Coil	0.17 insWg
Access Section	Access Section	
Chilled Water coil	Chilled Water coil	0.10 insWg
Chilled Water coil	Chilled Water coil	1.21 insWg
Return Fan	Cabinet	
Plenum Section	Plenum Section	0.05 insWg
External Static	External Static	3.00 insWg
Total Return/Ex	7.07 insWg	

Minimum Recommended Drain Pan Trap Dimensions					
Shipping Section	Component	Н			
1	Chilled Water coil	11.08			
2	Chilled Water coil	11.62			
2	Chilled Water coil	14.04			
4	Chilled Water coil	5.08			
5	Chilled Water coil	5.28			
5	Chilled Water coil	7.70			



Dimensions provided as a courtesy and are recommended minimums only. Daikin is not responsible for supplying or designing drain pan traps and is not responsible for any damage caused by incorrect trap heights. The dimensions listed above should be reviewed and approved by a licensed plumbing professional.

## **AHRI Certification**



Certified by the AHRI Central Station Air-Handling Unit (AHU) Certification Program, which is based on AHRI Standard 430/431. AHRI certified units are subject to rigorous and continuous testing, have performance ratings independently measured and are third-party verified. Certified units may be found in the AHRI Directory at www.ahridirectory.org.

BOBKVU UAMS CAMID 13 11/1/2024

# Notes

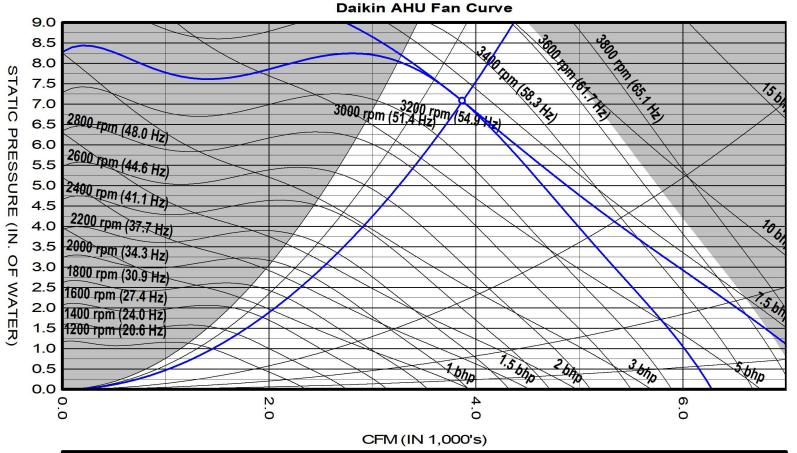
#### Important

- 1. This unit may not meet ASHRAE Standard 90.1 2007 fan motor power limitations for the year and system selected. If that code applies, alternate fan selections may be required.
- 2. The designer and installer must ensure compliance with applicable codes. A component supplier cannot determine the brake horsepower ("BHP") for other motors in the air handling system.
- 3. Before approving this unit, determine whether ASHRAE Standard 90.1 2007 has been adopted in the specific jurisdiction or contract specifications in which the unit will be installed.

BOBKVU	UAMS CAMID	14	11/1/2024

11/1/2024

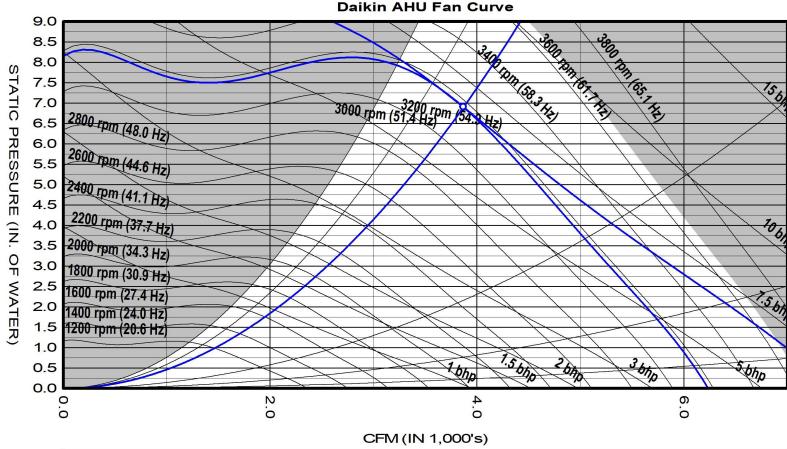
AHU-5 Stacked



AF 16 DD PLENUM 12BL (100% Width) 1x1 Ret/Exh Fan at Standard Conditions						
Air volume	3870	cfm	Fan speed		3199	rpm
Total static	7.07	insVVg	Max speed		3650	rpm
Fan Shaft Power	7.0	bhp	Efficiency		61.9	%
Approx VFD Setting	54.8	Hz	Motor Speed		3500	rpm
Fan Energy Index(FEI)	1.11					
Unit tagging	AHU-5 Stac	ked		Date	Novemb	er-01-2024
Job name	UAMS CAM	11D		Time	07:13	

11/1/2024

AHU-5 Stacked

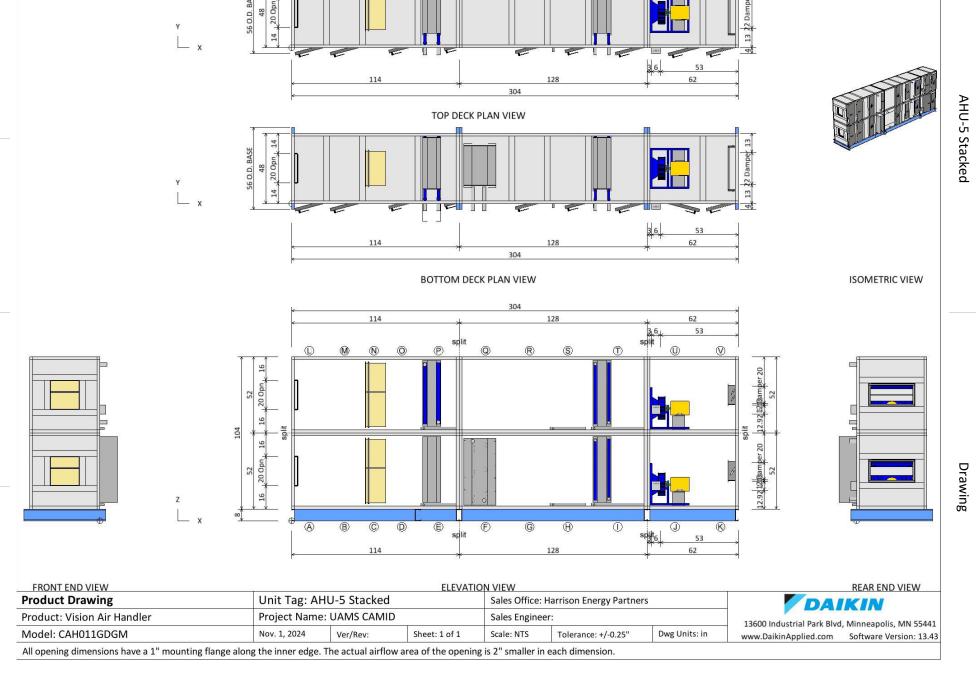


AF 16 DD PLENUM 12BL (100% Width) 1x1 Supply Fan at Standard Conditions						
Air volume	3870	cfm	Fan speed		3174	rpm
Total static	6.90	insVVg	Max speed		3650	rpm
Fan Shaft Power	6.8	bhp	Efficiency		61.8	%
Approx VFD Setting	54.4	Hz	Motor Speed		3500	rpm
Fan Energy Index(FEI)	1.11					
Unit tagging	AHU-5 Stacked			Date	Novemb	er-01-2024
Job name	UAMS CAM			Time	07:13	

Supply fan performance is certified in accordance with the Central Station

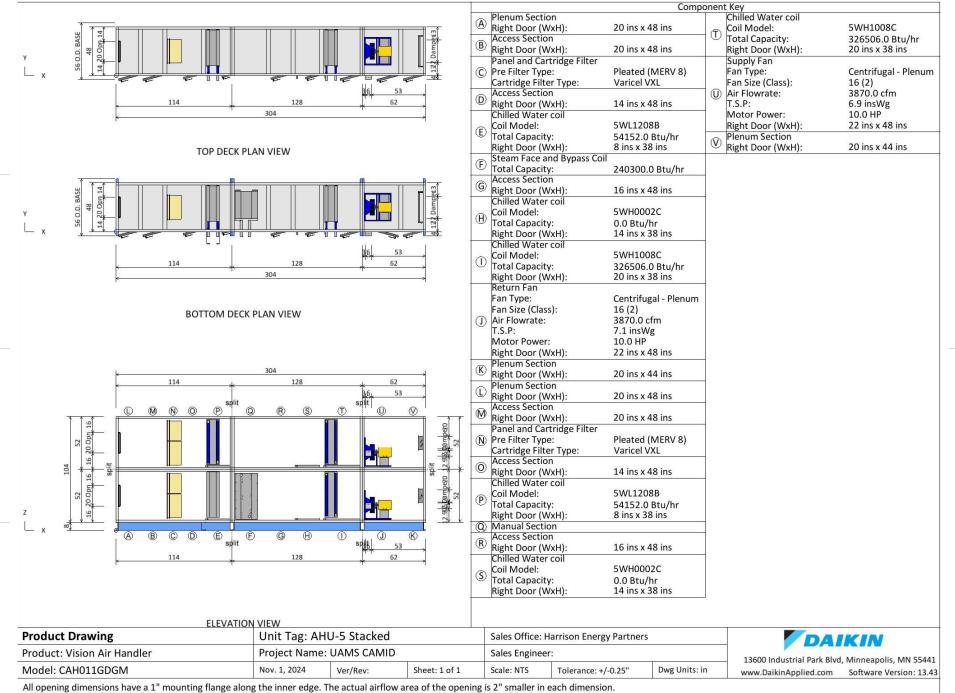
Air-Handling Unit Certification Program, which is based on AHRI Standard 430.



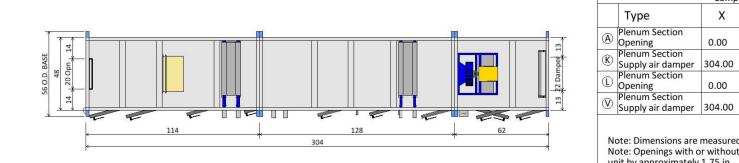




**BOBKVU** 



11/1/2024



Note: Dimensions are measured from the origin point. Note: Openings with or without dampers are recessed into the unit by approximately 1.75 in.

0.00

304.00

0.00

Component Key

14.00

9.50

14.00

9.50

Type

Plenum Section Opening

Plenum Section

Plenum Section

Supply air damper Plenum Section Opening

Z

24.00 20.00

27.50 29.00

76.00 20.00

79.50 29.00

Wid

Hgt

20.00

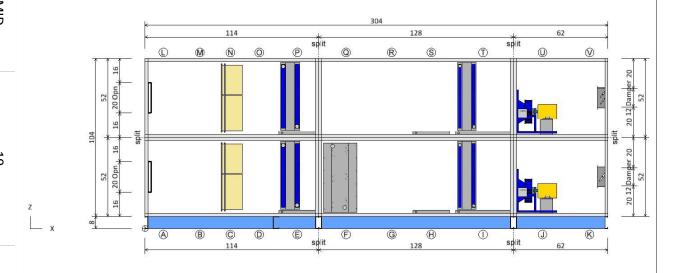
13.00

20.00

13.00

AHU-5 Stacked

#### PLAN VIEW



ELE	VATIO	ON VI	IEW

Product: Vision Air Handler Project Name: UAMS CAMID Sales Engineer:  Model: CAH011GDGM Nov. 1, 2024 Ver/Rev: Sheet: 1 of 1 Scale: NTS Tolerance: +/-0.25" Dwg Units:	<b>Opening/Damper Connections</b>	Unit Tag: AH	U-5 Stacked		Sales Office: Harrison Energy Partners			
Model: CAH011GDGM Nov. 1, 2024 Ver/Rev: Sheet: 1 of 1 Scale: NTS Tolerance: +/-0.25" Dwg Units:	Product: Vision Air Handler	Project Name:	UAMS CAMID		Sales Engineer:			
	Model: CAH011GDGM	Nov. 1, 2024	Ver/Rev:	Sheet: 1 of 1	Scale: NTS	Tolerance: +/-0.25"	Dwg Units: in	

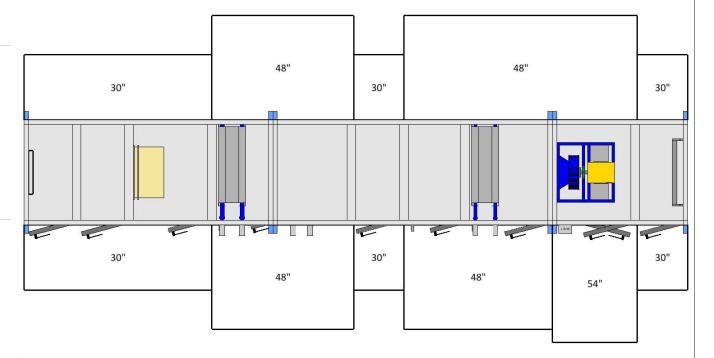
DAIKIN 13600 Industrial Park Blvd, Minneapolis, MN 55441

www.DaikinApplied.com Software Version: 13.43

11/1/2024

Check local electrical component service clearance codes for specific distances.

Access is only required on one side of the unit.



<b>PLAN</b>	V	<b>IEW</b>	

Service Clearance View	Unit Tag: AH	U-5 Stacked		Sales Office: Harrison Energy Partners			
Product: Vision Air Handler	Project Name:	UAMS CAMID		Sales Engineer:			
Model: CAH011GDGM	Nov. 1, 2024	Ver/Rev:	Sheet: 1 of 1	Scale: NTS	Tolerance: +/-0.25"	Dwg Units: in	

DAIKIN

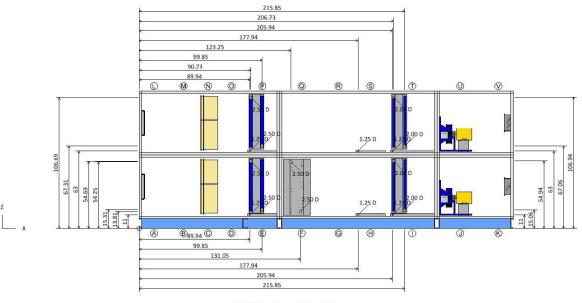
13600 Industrial Park Blvd, Minneapolis, MN 55441 www.DaikinApplied.com Software Version: 13.43

AHU-5 Stacked

	Type	X	Υ	Z	Diam
	Chilled Water coil				
	Condensate drain conn:	89.94	-2.90	11.00	1.25
(E)	Cold water inlet:	99.85	-5.00	15.31	2.50
	Cold water outlet:	90.73	-5.00	54.69	2.50
	Steam Face and Bypass Coil				
(F)	Steam inlet:	123.25	-5.00	54.25	2.50
~	Steam outlet:	131.05	-5.00	13.81	2.50
_	Chilled Water coil				
$\oplus$	Condensate drain conn:	177.94	-2.90	11.00	1.25
	Chilled Water coil				
1	Condensate drain conn:	205.94	-2.90	11.00	1.25
	Cold water inlet:	215.85	-5.00	15.06	2.00
	Cold water outlet:	206.73	-5.00	54.94	2.00
	Chilled Water coil				
	Condensate drain conn:	89.94	-2.90	63.00	1.25
P	Cold water inlet:	99.85	-5.00	67.31	2.50
	Cold water outlet:	90.73	-5.00	106.69	2.50
	Chilled Water coil				
<b>S</b>	Condensate drain conn:	177.94	-2.90	63.00	1.25
	Chilled Water coil				
	Condensate drain conn:	205.94	-2.90	63.00	1.25
1	Cold water inlet:	215.85	-5.00	67.06	2.00
	Cold water outlet:	206.73	-5.00	106.94	2.00

Note: Dimensions are measured from the origin point.

#### LEFT ELEVATION VIEW



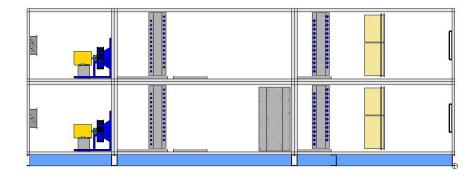
RIGHT ELEVATION VIEW

Product: Vision Air Handler Pro	oiect Name:	LIAMS CAMID		Calas Francisco	90.0	
	ojece manner	OAIVIS CAIVIID		Sales Engineer:		
Model: CAH011GDGM Nov	ov. 1, 2024	Ver/Rev:	Sheet: 1 of 1	Scale: NTS	Tolerance: +/-0.25"	Dwg Units: in

DAIKIN

13600 Industrial Park Blvd, Minneapolis, MN 55441 www.DaikinApplied.com Software Version: 13.43

11/1/2024



**LEFT ELEVATION VIEW** 

	Туре	Х	Υ	Z	Volts	Phase
(D)	Access Section LED Marine Light	82.00	0.00	34.00	110	1
(E)	Chilled Water coil LED Marine Light	108.00	0.00	54.00	110	1
G	Access Section LED Marine Light GFI	170.00	0.00	34.00	110	1
(H)	Chilled Water coil LED Marine Light	193.00	0.00	54.00	110	1
(I)	Chilled Water coil LED Marine Light	230.00	0.00	54.00	110	1
(1)	Return Fan Fan	248.00	0.00	23.92	460	3
(K)	Plenum Section LED Marine Light	292.00	0.00	56.00	110	1
0	Access Section LED Marine Light	82.00	0.00	86.00	110	1
(P)	Chilled Water coil LED Marine Light	108.00	0.00	106.00	110	1
(R)	Access Section LED Marine Light GFI	170.00	0.00	86.00	110	1
(S)	Chilled Water coil LED Marine Light	193.00	0.00	106.00	110	1
(1)	Chilled Water coil LED Marine Light	230.00	0.00	106.00	110	1
0	Supply Fan Fan	248.00	0.00	75.92	460	3
	Plenum Section LED Marine Light	292.00	0.00	108.00	110	1

Component Key

#### 230 193 170 108 82 M N 0 (\$) 1 0 0 Θ (A) ®<sub>82</sub> © 0 € (E) (G) $\oplus$ 1 (J) (K) 248

Note: Dimensions are measured from the origin point.

RIGHT ELEVATION VIEW

 Electrical Connections
 Unit Tag: AHU-5 Stacked
 Sales Office: Harrison Energy Partners

 Product: Vision Air Handler
 Project Name: UAMS CAMID
 Sales Engineer:

 Model: CAH011GDGM
 Nov. 1, 2024
 Ver/Rev:
 Sheet: 1 of 1
 Scale: NTS
 Tolerance: +/-0.25"
 Dwg Units: in

13600 Industrial Park Blvd, Minneapolis, MN 55441 www.DaikinApplied.com Software Version: 13.43

DAIKIN

		S	hippin	ions	
Section	Weight	lb)X	Υ	Z	
Section 1		114	48	52	-
Section 2		128	48	52	
Section 3		62	48	52	
Section 4		114	48	52	
Section 5		128	48	52	
Section 6		62	48	52	
Total Unit	7236.60	304	48	104	

Note: Base rails, curb ready base, coil connectors, drain connectors, and control boxes not included in height X, Y, Z dimensions.

Shipping section may be 2" longer in air flow direction due to internal splice joint.

	1		114			128				62		ř
	24	24	16	22	28	36	24	28	40	38	24	
52	PLENUM	ACCESS	PBFILT	ACCESS	CWC	MANUAL	ACCESS	CWC	CWC	6 FAN	PLENUM	52
52	1 PLENUM	ACCESS	PBFILT	ACCESS	CWC	IFB STC	ACCESS	CWC	CWC	3 FAN	PLENUM	52
_х	24	24	16 114	22	28	36	24	28	40	38 62	24	

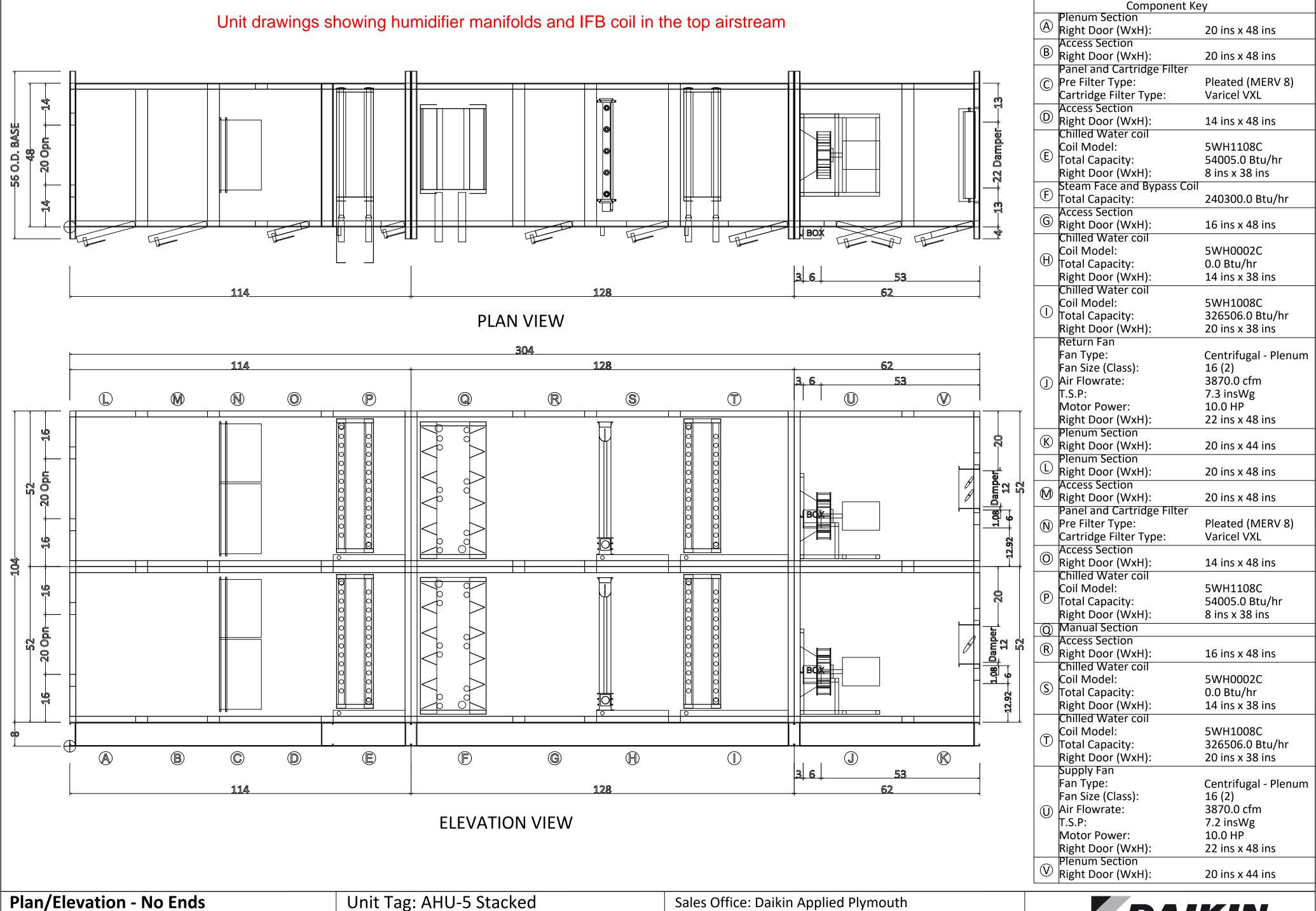
Shipping Sections	Unit Tag: AHI	J-5 Stacked		Sales Office: H	ffice: Harrison Energy Partners		
Product: Vision Air Handler	Project Name:	UAMS CAMID		Sales Engineer:			
Model: CAH011GDGM	Nov. 1, 2024 Ver/Rev: Sheet: 1 of 1			Scale: NTS	Tolerance: +/-0.25"	Dwg Units: in	

DAIKIN

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11/1/2024

Product Drawing	Drawing Unit Tag: AHU-5 Stacked					's	DAIKIN		
Product: Vision Air Handler	Project Name:	UAMS CAMID		Sales Enginee	er:	13600 Industrial Park Blvd, Minneapolis, MN 55441			
Model: CAH011GDGM	Nov. 1, 2024	Ver/Rev:	Sheet: 1 of 1	Scale: NTS	Tolerance: +/-0.25"	Dwg Units: in	www.DaikinApplied.com Software Version: 13.43		
All and the discount of the last and the second sec	VI 2 1 5		C.1 .		T 155 3				



Plan/Elevation - No Ends	Unit Tag: AH	U-5 Stacked		Sales Office: D	Daikin Applied Plymouth			
Product: Vision Air Handler	Project Name:	: UAMS CAMID		Sales Engineer:				
Model: CAH011GDGM	Oct. 24, 2024	Ver/Rev: A	Sheet: 1 of 1	Scale: NTS	Tolerance: +/-0.25"	Dwg Units: in		



13600 Industrial Park Blvd, Minneapolis, MN 55441 www.DaikinApplied.com Software Version: 13.43



# Submittal Package



Opportunity Name, Quote Name UAMS CAMID, 896314

Preparation Date 2024-07-23

Locally Represented By Condair House Account Sales 2740 Fenton Road Ottawa, Ontario, Canada

Salesperson Liam Berry



## **Zone List**

Zone Tag	Q <sub>MA</sub> CFM	Q <sub>OA</sub> %	DB <sub>OA</sub> °F	RH <sub>OA</sub> %	DB <sub>BH</sub> °F	RH <sub>BH</sub> %	DB <sub>AH</sub> °F	RH <sub>AH</sub> %	DB <sub>SD</sub> °F	RH <sub>SD</sub> %	<b>W</b> <sub>Duct</sub> in.	H <sub>Duct</sub> in.	H <sub>TOT</sub> lbs/hr	Absorption ft	Location	Tech
H-2	26000	100	53	13	53	13	53	83	53	80	108	72	718	1.62	In Duct	LiveSteam
H-5	2500	100	52	13	55	11	55	85	55	80	30	36	77	1.97	In Duct	LiveSteam

 $Q_{MA}$  = Mixed Air Volume  $Q_{OA}$  = Outside Air

DB<sub>OA</sub> = Outside Air Design Dry Bulb Temperature RH<sub>OA</sub> = Outside Air Design Relative Humidity

 $DB_{BH}$  = Before Humidification Dry Bulb Temperature  $RH_{BH}$  = Before Humidification Relative Humidity

DB<sub>AH</sub> = After Humidification Dry Bulb Temperature RH<sub>AH</sub> = After Humidification Relative Humidity

 $DB_{SD}$  = Space Design Dry Bulb Temperature  $RH_{SD}$  = Space Design Relative Humidity

 $W_{Duct} = Duct Width$   $H_{Duct} = Duct Height$ 

H<sub>TOT</sub> = Total Humidification Absorption = Absorption Distance



## **Product List**

Zone Tag	Part Number		Item	Qty
H-2	1594341		Valve, Bronze, 1 1/4" Cv=20.0	1
H-2	2597632		Act. 0-10 Vdc 1/2 - 2 in (1/2 - 3/4 SS)	1
H-2	2597652		Wye Strainer, 2.0" nominal diameter	1
H-2	2577157		Trap F&T up to 15 psig, M	1
H-2	2549922		HEADER SAM-E 108, 3" CENTERS (SST)	1
H-2	2538925		Header Insulation, SAM-e 108"	1
H-2	1503419		Steam Tube, SAM-e, 60 in Type B, 304SS	33
H-2	2538853		Tube Insulation, SAM-e 60" (Covers 1 Tube)	33
H-2	2521405		Mounting Frame, SAM-e 51 - 99 in, SS	1
H-2	1503476		Inlet adapter, SAM-e, Pressure Steam 1-1/4" npt	1
H-2	2591657		SP Top Center Mounting Assembly	3
H-2	2591658		SP SAM-e Adjustable voke Side Frame qtv2	1
H-2	2577157		Trap F&T up to 15 psig, M	$Y \mid 1Y$
H-5	1594314	>	Valve, Bronze, 1/2" Cv=2.20	1
H-5	2597632	_	Act. 0-10 Vdc 1/2 - 2 in (1/2 - 3/4 SS)	1 1
H-5	2597648		Wye Strainer, 0.75" nominal diameter	1 1
H-5	2577157		Trap F&T up to 15 psig, M	1
H-5	2549909	<b>&gt;</b>	HEADER SAM-E 30, 3" CENTERS (SST)	1 1
H-5	2538912		Header Insulation, SAM-e 30"	1 🕌
H-5	1503391		Steam Tube, SAM-e, 24 in Type A, 304SS	7
H-5	2538847	<u> </u>	Tube Insulation, SAM-e 24" (Covers 1 Tube)	7
H-5	2521404		Mounting Frame, SAM-e 27 - 51 in, SS	1
H-5	1503473		Inlet adapter, SAM-e, Pressure Steam1/2" npt	1
H-5	2591657		SP Top Center Mounting Assembly	1
H-5	2591658	<b>&gt;</b>	SP SAM-e Adjustable yoke, Side Frame qty2	1
H-5	2577157		Trap F&T up to 15 psig, M	1

Product list appears to list devices for AH-5 as 1 unit. AH-5 is 2 independent identical units. Update product list accordingly.



## Data Sheet - H-2



Opportunity Name: UAMS CAMID

Quote Name: 896314 Salesperson: Liam Berry

Date: 2024-07-23



#### **Calculation Basis**

Humidification Load (total)	718.0 lbs/h
Load Correction (gains/losses)	30.7 lbs/h
Calculated Load	687.3 lbs/h
Duct Size	108 x 72 in.
Duct Orientation	Horizontal
Total Air Volume	26000 CFM
Outside Air	100 %
Air Velocity	481.5 ft./min
Altitude	0 ft
Air Pressure	14.7 psig
Humidity Increase	40.3 gr/lb

Outside Air	Temperature Relative Humidity Absolute Humidity	53.0°F 13 % 7.4 gr/lb
Before Humidification	Temperature Relative Humidity Absolute Humidity	53.0°F 13 % 7.4 gr/lb
After Humidification	Temperature Relative Humidity Absolute Humidity	53.0°F 83 % 49.5 gr/lb
Space Design	Temperature Relative Humidity Absolute Humidity	53.0°F 80 % 47.7 gr/lb

UPDATE TO 300'

#### **Product Data**

## Valve, Bronze, 1 1/4" Cv=20.0

Supplied Steam Pressure:	12 psig
Adjusted Maximum Capacity:	719.3 lbs/h
Steam Outlet OD:	1.25 in.
Quantity Steam Outlets:	1
Minimum Steam Pressure:	2 psig

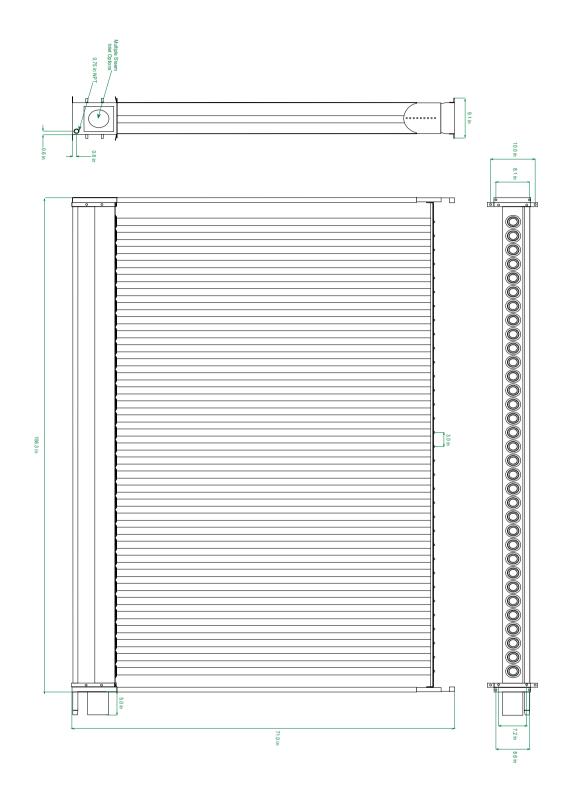
Maximum Steam Pressure:	50 psig
Width:	17.3 in.
Height:	23.7 in.
Depth:	9 in.
Valve CV:	20

## **HEADER SAM-E 108, 3" CENTERS (SST)**

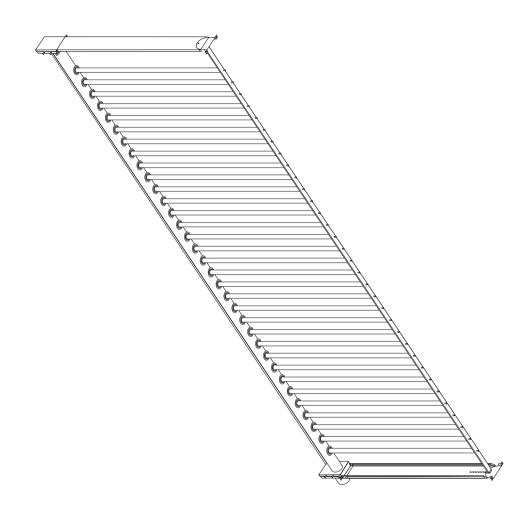
Width:	ŕ	9 in.
Height:		8.75 in.
Length:		106.25 in.

Net Weight:	43.4 lbs
Product Length:	108 in.











51.5°F

13 %

7.0 gr/lb

55.0°F

55.0°F

54.3 gr/lb 55.0°F

51.2 gr/lb

85 %

80 %

11 % 7.0 gr/lb

## Data Sheet - H-5



Opportunity Name: UAMS CAMID

Quote Name: 896314 Salesperson: Liam Berry

Date: 2024-07-23



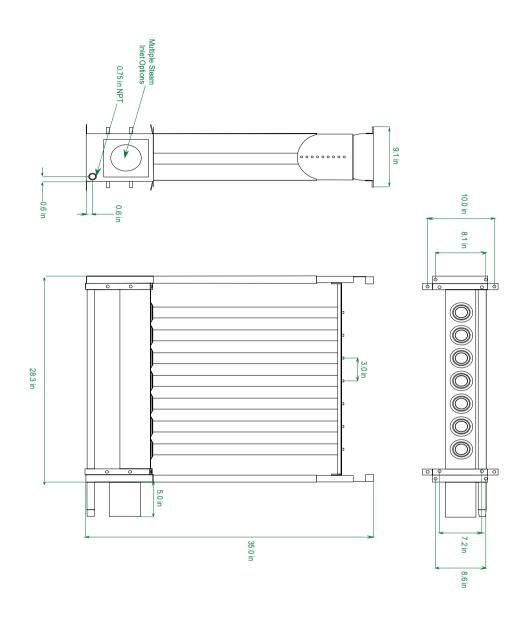
### **Calculation Basis**

Humidification Load (total)	77.1 lbs/h	Outside Air	Temperature Relative Humidity
Load Correction	5.0 lbs/h		Absolute Humidity
(gains/losses)		D (	Temperature
Calculated Load	72.1 lbs/h	Before Humidification	Relative Humidity
Duct Size	30 x 36 in.	Turniumcation	Absolute Humidity
Duct Orientation	Horizontal	After	Temperature
Total Air Volume	2500 CFM	Humidification	Relative Humidity
Outside Air 100 %			Absolute Humidity
Air Velocity	333.3 ft./min		Temperature
Altitude	0 ft	Space Design	Relative Humidity
Air Pressure	14.7 psig		Absolute Humidity
Humidity Increase	44.2 gr/lb	update to 300'	
		· ·	

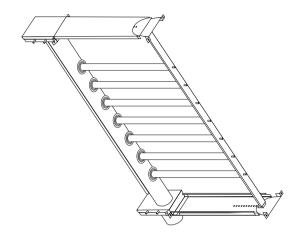
## **Product Data**

1 Todact Bata			
Valve, Bronze, 1/2" Cv=2.20			
Supplied Steam Pressure:	12 psig	Maximum Steam Pressure:	50 psig
Adjusted Maximum Capacity:	79.1 lbs/h	Width:	9.7 in.
Steam Outlet OD:	0.5 in.	Height:	11.2 in.
Quantity Steam Outlets:	1	Depth:	6 in.
Minimum Steam Pressure:	2 psig	Valve CV:	2.2
HEADER SAM-E 30, 3" CEN	ITERS (SST)		
Width:	9 in.	Net Weight:	15.4 lbs
Height:	8.75 in.	Product Length:	30 in.
Length:	28.25 in.		









# A1 - Live Steam (1594341) Description LIVESTEAM HUMIDIFIERS

**Pressurized Boiler Steam Humidifier (Isothermal Technology)** 



Pre-engineered, cost effective, humidification system designed to control and distribute steam under pressure, from a facility steam boiler, for introduction into a duct or Air Handling Unit.

The system is configured to operate with regular boiler steam, up to 50 psig, using standard bronze and stainless steel components.

Steam distributors are constructed of high quality stainless steel and can be configured for single or multiple configurations. The optional stainless steel insulation jacket encompasses 1/2" fiberglass insulation to minimize heat transfer in the air stream

All LIVESTEAM systems consist of: a steam valve, separator, actuator/linkage and steam distributor(s). Required optional components: steam trap(s), wye strainers, humidistat(s) and temperature switch.

#### **FEATURES**

- · Stainless steel separators
- Bronze steam valves with stainless steel seat, stem, and plug
- Pneumatic or electric actuator/linkage
- Stainless steel steam distributors (standard or insulated)
- Single distributor capacity: up to 1501 lbs/hr @ 50 psi
- Multiple distributor capacity: up to 3209 lbs/hr @ 50 psi
- · On/Off or modulating control
- · Two-year limited warranty



## A2 - Live Steam (1594341) Schematic

### **VALVE DATA**

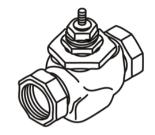
Valve Manufacturer: Schneider Electric

 Valve Model:
 VB-7263

 Valve Size:
 1/2" - 2"

Flow Type: Modified Equal Percentage

Flow Coefficient (Cv) Factor: As Specified



Valve Body Data	Material		
Maximum Static Pressure	250 Psig	Body	Bronze
Maximum Inlet Pressure (Steam)	100 Psig Stem Stair		Stainless Steel
Recommen ded Differential Pressure	35 Psig	Seat	Bronze
Recommended Differential Flessure	33 FSIB	Plug	Stainless Steel
Maximum Media Temperature	340°F(171°C)	Packing	Spring Loaded Teflon Cone
Plug Type	Parabolic	Disc	Teflon

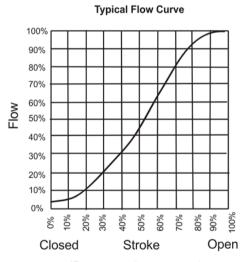
Rangeability:

Rangeability is defined as the ratio of rated flow to the minimum controllable flow.

For two-way valves, modulation occurs when plug displacement allows flow through the area between the plug and the port. The rangeability value is achieved by accurately machining the plug and port diameters for appropriate clearance. The following are normal values, with 25% tolerances.

Nomina	l Size	Valve	Nominal Ratio	
Standard	Metric	Cv	Nominal Ratio	
		0.1	2:1	
		0.22	4:1	
		0.4	5:1	
1/2"	15mm	0.75	10:1	
1/2"	12111111	1.3	15:1	
		2.2	25:1	
		2.8	28:1	
		4.4	40:1	
2/4"	20	5.5	50:1	
3/4"	20mm	7.5	60:1	
1"	25	10	60:1	
1	25mm	12	75:1	
1 1/4"	32mm	20	75:1	
1 1/2"	40mm	28	75:1	
2"	50mm	40	75:1	

NORTEC reserves the right to ship the selected valve or an equivalent valve depending on availability



\*For representative purposes only



CONTROL VALVE BRONZE BODY



## A3 - Live Steam (2597632) Description

LIVESTEAM / SE Series Electric Modulating Actuator, provides motive power to operate steam valves. The actuators are designed mount directly to the valves without the use of linkages. They are linear acting and feature a return spring to close the valve in case of a loss of power. A manual override simplifies commissioning and allows the user to set the correct pre-load tension on the valve stem. The actuators are designed for safe operation and feature overload protection as well as a plenum rated polymer housing. Available control voltages include on/off, 0-10VDC, or 4- 20 mA, and 2 to 10 VDC feedback signal reports position of the valve. All actuators a operate with a 24 VAC supply voltage. For applications where only 120 VAC is available, a plug-in transformer, part 1603032, can be used.



## A4 - Live Steam (2597632) Installation

## Actuator/Valve Close-Off Pressure

Valve	Valve Part	0)/	<u> </u>	Pressure*	Actu	uator Part Nun	nber	1.1 17:44
Material	Number	cv	Size	(psig)	0-10 Vdc	4-20 mAdc	On/Off	Linkage Kit**
	1594300	0.10	0.5"	2-50	1507549	1507550	1507551	2573331
	1594302	0.22	0.5"	2-50	1507549	1507550	1507551	2573331
	1594304	0.40	0.5"	2-50	1507549	1507550	1507551	2573331
	1594306	0.75	0.5"	2-50	1507549	1507550	1507551	2573331
	1594310	1.3	0.5"	2-50	1507549	1507550	1507551	2573331
	1594314	2.2	0.5"	2-50	1507549	1507550	1507551	2573331
	1594316	2.9	0.5"	2-50	1507549	1507550	1507551	2573331
	1594318	4.4	0.5"	2-50	1507549	1507550	1507551	2573331
Bronze	1594322	5.5	0.75"	2-50	1507549	1507550	1507551	2573331
	1594324	7.5	0.75"	2-50	1507549	1507550	1507551	2573331
	1594330	10	1"	2-50	1507549	1507550	1507551	2573331
	1594332	12	1"	2-50	1507549	1507550	1507551	2573331
	1594341	20	1.25"	2-50	1507549	1507550	1507551	2573331
	4504050	00	4 5"	2-35	1507549	1507550	1507551	2573331
	1594350	28	1.5"	36-50	1507552	1507553	1507554	2573332
	1594360	40	0"	2-20	1507549	1507550	1507551	2573331
		40	2"	21-50	1507552	1507553	1507554	2573332
	1594201	0.10	0.5"	2-50	1507549	1507550	1507551	2573333
	1594203	0.22	0.5"	2-50	1507549	1507550	1507551	2573333
	1594205	0.40	0.5"	2-50	1507549	1507550	1507551	2573333
	1594206	0.75	0.5"	2-50	1507549	1507550	1507551	2573333
	1594207	0.95	0.5"	2-50	1507549	1507550	1507551	2573333
	1594208	1.3	0.5"	2-50	1507549	1507550	1507551	2573333
	1594209	1.75	0.5"	2-50	1507549	1507550	1507551	2573333
Stainless	1594210	2.2	0.5"	2-50	1507549	1507550	1507551	2573333
Steel	1594211	2.8	0.5"	2-50	1507549	1507550	1507551	2573333
	1594213	3.6	0.5"	2-50	1507549	1507550	1507551	2573333
	1594221	4.3	0.75"	2-50	1507549	1507550	1507551	2573333
	1594222	5	0.75"	2-50	1507549	1507550	1507551	2573333
	1594223	6.2	0.75"	2-50	1507549	1507550	1507551	2573333
	1594432	10	1"	2-50	1507556	1507557	1507558	2573334
	1594440	24	1.5"	2-50	1507556	1507557	1507558	2573334
	1594450	40	2"	2-50	1507556	1507557	1507558	2573334

<sup>\*</sup>Maximum operating steam pressure for LiveSteam humidifiers is 50 PSIG (15 PSIG on Steam Exchange Humidifiers)



Actuators Maximum Close-Off Pressure

<sup>\*\*</sup>Linkage Kit already included with Actuator



## A5 - Live Steam (2597632) Shop Drawing



For bronze  $\frac{1}{2}$ " – 2" and stainless steel  $\frac{1}{2}$ " –  $\frac{3}{4}$ " valves, for incoming pressures from 2 to 50 psi for all valves, except for 1 1/2" which would be 2 to 34 psi and 2" which would be 2 to 19 psi.

#### **Actuator Inputs**

Control Signal: On/Off, 0-10 Vdc, 4-20 mAdc

Power Input: See Table-1. All 24 Vac circuits are Class 2. All circuits 30 Vac and above are class 1.

Connections: 3 ft (91cm) appliance wire or plenum cables, enclosure accepts 1/2" (13mm) conduit connectors. For

M20 metric connector, use 1/2" NPT to M20 adaptor.

#### **Actuator Outputs**

#### Electrical:

**Position Feedback Voltage (proportional or floating only):** For voltage ranges, the feedback signal is the same range as the input signal. The 4-20 mAdc current range and floating actuators have a 2-10 Vdc position feedback signal. The position feedback signal can supply up to 0.5 mA to operate up to 4 additional slave actuators.

#### Mechanical:

Linear Stroke: 1/2" (13mm) nominal.

Approx. Stroke Timing: Powered, 44-60 sec.

Manual Override: Allows positioning of valve and pre-load using manual crank.

Right/Left Jumper: Permits reverse acting/direct acting linear motion (0-10 Vdc and 4-20 mAdc only).

#### Environment:

Shipping & Storage: -40 to  $160^{\circ}F$  (-40 to  $71^{\circ}C$ )

**Operating:** -22 to 140°F (-30 to 60°C)

Temperature Restrictions: For maximum ambient 140°F (60°C) the maximum allowable fluid temperature should

not exceed 366°F (186°C).

Humidity: 15-95%RH, non-condensing

Location: NEMA 1. NEMA 2 (enclosure is air plenum rated), UL Type 2 (IEC IP54) with customer supplied water

tight conduit connectors.

Overall Dimensions: 6.76" (172mm) x 3.5" (89mm) x 6.31" (160mm)

#### **Agency Listings**

UL 873: Underwriters Laboratories (File #E9429 Category Temperature-Indicating and Regulating Equipment). CUL: UL Listed for use in Canada by Underwriters Laboratories. Canadian Standards C22.2 No. 2493.

#### Table 1

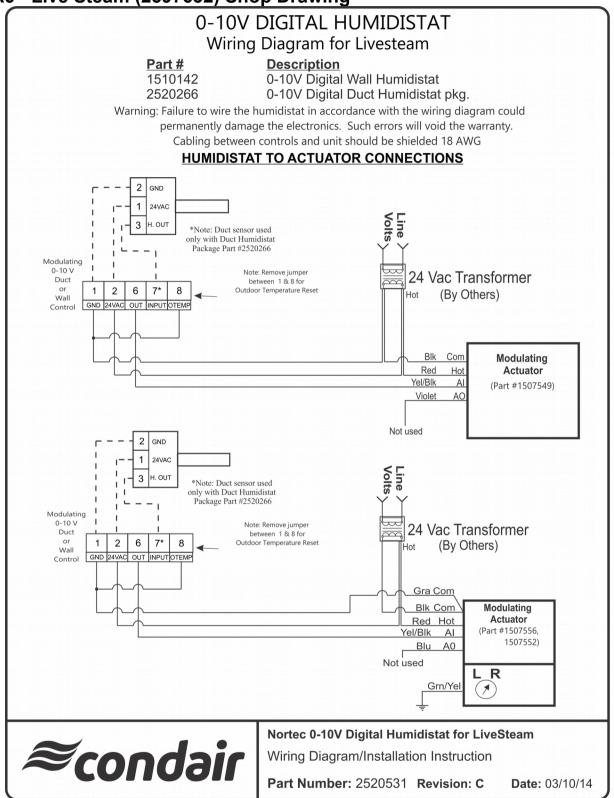
		8.77		Actua	tor Po	wer Ir	nput		2005 E 115-7	Approx. Stroke		Output	
Part Control Number Action	Control		Running Holding						Linear	Timing		Force Rating	
	Voltage	50Hz 6		60H	Ηz	- 50	50/60Hz	Stroke Inches	in Seconds @ 70°F (21°C)		lb (Newton)		
			VA	W	VA	W	Amps	W		Powered	Spring Return	Min.	Max Stall
1507549 1507550	0-10 Vdc 4-20 mAdc	24 Vac±20%			1/2	60	16		-				
1507551	On/Off	20-30 Vdc	5.3	4.1	5.3	4.1	0.15	1.2		44	19		



Electric Actuator Part # 1507549, 1507550, 1507551

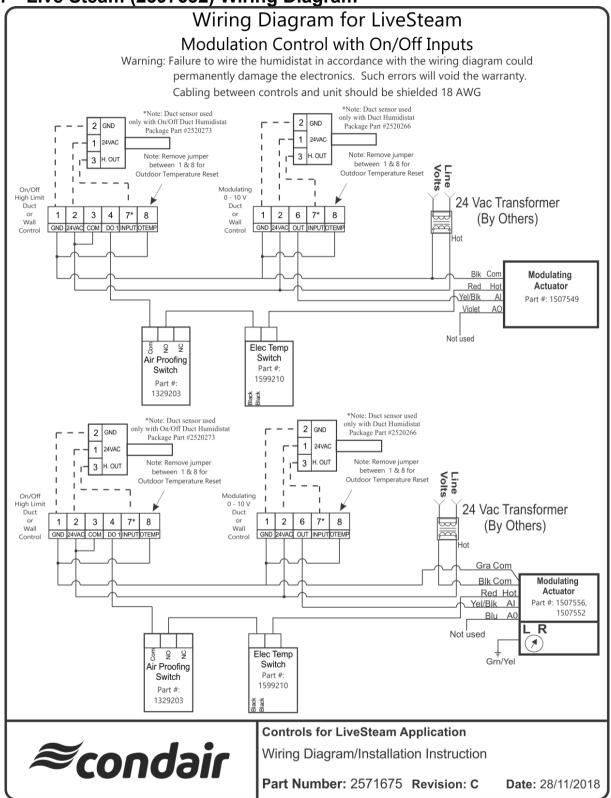


## A6 - Live Steam (2597632) Shop Drawing





## A7 - Live Steam (2597632) Wiring Diagram





A8 - Live Steam (2597652) Description

<u>LIVESTEAM Wye Strainer</u>, used in the supply steam line to remove impurities by filtering the steam through a strainer screen.



## A9 - Live Steam (2597652) Shop Drawing

## STRAINER DATA

Strainer Type: "Y" Type
Strainer Size: ½" to 3"
Connection: NPT

Body Material: Cast Iron

Screen Material: 20 Mesh Stainless Steel

Pressure (non-shock): 250 psi (1725 kPa) - 406°F (208°C)

Installation: The strainer should be installed with the flow direction as

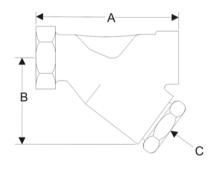
indicated on the body, in a vertical down or horizontal pipe line. The strainer must be accessible for periodic removal of accumulated debris by either blowing down or removal and

cleaning of the screen.

Туре	IT
Sizes	1/2" to 3"
Connections	NPT
Construction	Cast Iron
Maximum Saturated Steam Pressure	250 psig
Standard Screen	20 Mesh Type 304 Stainless Steel

No	Part	Material
1	Body	Cast Iron
2	Bushing (1/4" - 2")	Malleable Iron
2A	Cap (2 1/2" - 3")	Cast Iron
3	Cap Gasket (2 1/2" & 3")	Graphite
4	Standard Screen	Stainless Steel Type 304

Dimension	Α	В	С	Weight		
Size	inch	inch	NPT	lbs		
1/2	3-3/16	2-1/16	3/8"	1.2		
3/4	3-3/4	2-7/16	1/2"	2.9		
1	4	2-5/8	3/4"	4.3		
1-1/4	5	3-3/8	1"	6.5		
1-1/2	5-3/4	3-7/8	1-1/4"	9.6		
2	7	4-3/4	1-1/2"	12.9		
2-1/2	9-1/4	5-7/8	1-1/4"	22.0		
3	10.0	6	1-1/4"	35.0		





Strainer - Cast Iron Nortec Part #159-9620 to 159-9627



## A10 - Live Steam (2597652) Shop Drawing

## STRAINER DATA

Steam Pr	ressure				Strai	iner No	minal l	Diamete	er in In	ches			
		3/4		1		1 1	1 1/4		1 1/2		2		1/2
psig	kPa	lbs/hr	bs/hr kg/hr lbs/hr k		kg/hr	lbs/hr	kg/hr	lbs/hr	kg/hr	lbs/hr	kg/hr	lbs/hr	kg/hr
2	14	105	48	182	83	255	116	346	157	638	290	912	414
5	34	124	56	215	98	301	137	409	186	753	342	1075	489
10	69	155	70	270	123	378	172	512	233	944	429	1348	613
15	103	186	85	324	147	454	206	616	280	1135	516	1621	737
20	138	218	99	379	172	530	241	720	327	1326	603	1894	861
25	172	249	113	433	197	607	276	824	374	1517	690	2167	985
30	207	281	128	488	222	683	311	927	421	1708	776	2440	1109
35	241	312	142	543	247	760	345	1031	469	1899	863	2713	1233
40	276	343	156	597	271	836	380	1135	516	2090	950	2986	1357
45	310	375	170	652	296	912	415	1238	563	2281	1037	3259	1481
50	345	406	185	706	321	989	450	1342	610	2472	1124	3532	1605



Strainer Size Performance Data



A11 - Live Steam (2577157) Description

<u>LIVESTEAM Steam Trap</u>, float and thermostatic for pressures up to 15 psig. The trap allows removal of condensate from a pressurized steam system while preventing the passage of steam.



## A12 - Live Steam (2577157) Shop Drawing

TRAP DATA

Trap Type: Float and Thermostatic

3/4" NPT **Trap Connection:** 

Cast Iron Body and Cover. Stainless Steel Internals. Construction:

**Maximum Operating Pressure:** 15 psig (103 kPa) Nortec Part #2577157

75 psig (103 kPa) Nortec Part #1599602

Installation:

Full port isolating valves should be placed to permit servicing. The trap should be installed below the drainage point with a collecting leg before the trap, in a position so that the float arm is in a horizontal plane so that the float rises and falls vertically, and with the direction of flow as indicated on the body. The trap has 4 orifices and 2 plugs

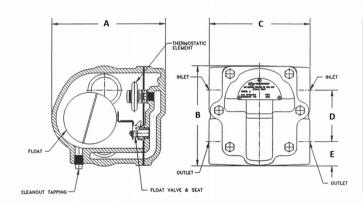
to facilitate installation.

Maintenance: This product can be maintained without disturbing the

piping connections. Complete isolation from both supply and return line is required before any servicing is

performed.

	Dimensions in (cm)										
	Cleanout										
	Α	В	С	D	E	Weight	port	Ports			
2577157/	5-3/4	5-11/16	4-7/8	3-3/8	1-5/32	12 lbs		4 ports, 2 plugs,			
1599602	(14.6)	(14.4)	(12.3)	(8.5)	(2.9)	(5.4 kg)	1/4"NPT	3/4" NPT			



Consti	ruction Materials							
Part	Material							
Body	Class 30 Cast Iron							
Сар	Class 30 Cast Iron							
Disc	Stainles Steel & Brass							
Hinge	Brass							
Pin, Hinge	Stainles Steel							
Gasket	non Asbestos Fiber							
Seat	SST, Brass Holder							
Valve	Stainless Steel							
Clip	Stainless Steel							
Lever & float	Stainless Steel							
Plug 1/4" NPT	Steel							



Steam Trap - F&T Cast Iron Nortec Part # 2577157, 1599602



## A13 - SAM-e (2549922) Description SAM-e HEADERS

The SAM-e distributes clean steam, precisely controlled, uniformly into the entire air stream, and void of any condensate spray. Steam distribution takes place via steam tubes with integrated nozzles. The steam is kept dry as condensate is drained through the main header.

The stainless steel headers are typically installed with vertical tubes for horizontal airflow applications, but can also be mounted horizontally (10 deg. incline from horizontal) for vertical airflow applications. The headers can be ordered 3, 6, 9, or 12 inch center to center tube spacing for maximum flexibility and optimal steam distribution..

Manufactured out of high grade 304 stainless steel, the header features welded inlet and condensate connections to ensure leak-free operation. Stainless steel inlet adapter is factory supplied for connection to steam supply line(s), allowing maximum flexibility, and simplification of installation. Specialized synthetic grommets form an air and water-tight seal around the base of the steam tubes, simplifying installation and ensuring reliable leaf-free operation.

Headers are also available with optional 304 stainless steel insulation. This metal shielding creates an insulating air-gap around the header which minimizes heat transfer by conduction and convection, while the reflective surface minimizes heat transfer by radiation. Insulating the header in this manner increases energy efficiency by up to 70%, and results in significantly reduced airstream heat gain and steam condensate loss.

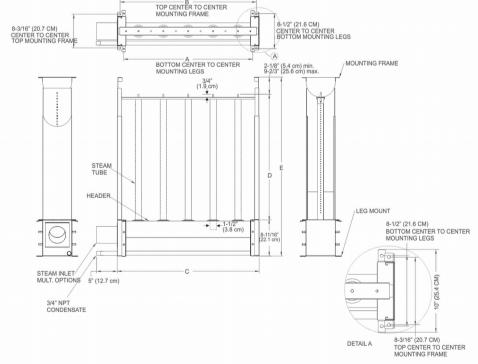
#### **FEATURES**

- Steam tubes with end support bracket for easy installation.
- All stainless steel distributors and nozzles ensure permanent bond.
- Stainless steel header with rubber grommet seals for easy installation of steam tubes.
- Includes hose cuffs and clamps for steam line connections.
- Adjustable mounting frame available for quick and easy installation.
- Available with 3", 6", 9" or 12" center to center steam tube spacing.
- Available insulated for increased energy efficiency and reduced airstream heat gain.
- High capacities.
- Ten year limited warranty.



## A14 - SAM-e (2549922) Shop Drawing

Duct	Width	Α		В	1	c	;		Duct	Height	Tube l		E Min.		E Max.	
in	cm	in	cm	in	cm	in	cm		in	cm	in	cm	in	cm	in	cm
18	45.7	13 1/8	33.3	14 7/8	37.8	16 1/4	41.3	П	18	45.7	5 1/2	14.0	17	43.2	24 2/3	62.
24	61.0	19 1/8	48.6	20 7/8	53.0	22 1/4	56.5	٦	24	61.0	11 1/2	29.2	23	58.4	30 2/3	77.
30	76.2	25 1/8	63.8	26 7/8	68.3	28 1/4	71.8	٦	30	76.2	17 1/2	44.5	29	73.7	36 2/3	93.
36	91.4	31 1/8	79.1	32 7/8	83.5	34 1/4	87.0	٦	36	91.4	23 1/2	59.7	35	88.9	42 2/3	108
42	106.7	37 1/8	94.3	38 7/8	98.7	40 1/4	102.2	٦	42	106.7	29 1/2	74.9	41	104.1	48 2/3	123
48	121.9	43 1/8	109.5	44 7/8	114.0	46 1/4	117.5	٦	48	121.9	35 1/2	90.2	47	119.4	54 2/3	138
54	137.2	49 1/8	124.8	50 7/8	129.2	52 1/4	132.7	٦	54	137.2	41 1/2	105.4	53	134.6	60 2/3	154
60	152.4	55 1/8	140.0	56 7/8	144.5	58 1/4	148.0	Ī	60	152.4	47 1/2	120.7	59	149.9	66 2/3	169
66	167.6	61 1/8	155.3	62 7/8	159.7	64 1/4	163.2	٦	66	167.6	53 1/2	135.9	65	165.1	72 2/3	184
72	182.9	67 1/8	170.5	68 7/8	174.9	70 1/4	178.4	٦	72	182.9	59 1/2	151.1	71	180.3	78 2/3	199
78	198.1	73 1/8	185.7	74 7/8	190.2	76 1/4	193.7	٦	78	198.1	65 1/2	166.4	77	195.6	84 2/3	215
84	213.4	79 1/8	201.0	80 7/8	205.4	82 1/4	208.9		84	213.4	71 1/2	181.6	83	210.8	90 2/3	230
90	228.6	85 1/8	216.2	86 7/8	220.7	88 1/4	224.2	$\Box$	90	228.6	77 1/2	196.9	89	226.1	96 2/3	245
96	243.8	91 1/8	231.5	92 7/8	235.9	94 1/4	239.4	٦	96	243.8	83 1/2	212.1	95	241.3	102 2/3	260
102	259.1	97 1/8	246.7	98 7/8	251.1	100 1/4	254.6		102	259.1	89 1/2	227.3	101	256.5	108 2/3	276
108	274.3	103 1/8	261.9	104 7/8	266.4	106 1/4	269.9	T	108	274.3	95 1/2	242.6	107	271.8	114 2/3	291
114	289.6	109 1/8	277.2	110 7/8	281.6	112 1/4	285.1	٦	114	289.6	101 1/2	257.8	113	287.0	120 2/3	306
120	304.8	115 1/8	292.4	116 7/8	296.9	118 1/4	300.4	٦	120	304.8	107 1/2	273.1	119	302.3	126 2/3	321
126	320.0	121 1/8	307.7	122 7/8	312.1	124 1/4	315.6		126	320.0	113 1/2	288.3	125	317.5	132 2/3	337
132	335.3	127 1/8	322.9	128 7/8	327.3	130 1/4	330.8		132	335.3	119 1/2	303.5	131	332.7	138 2/3	352
138	350.5	133 1/8	338.1	134 7/8	342.6	136 1/4	346.1		138	350.5	125 1/2	318.8	137	348.0	144 2/3	367
144	365.8	139 1/8	353.4	140 7/8	357.8	142 1/4	361.3	7	144	365.8	131 1/2	334.0	143	363.2	150 2/3	382



**≋**condair

SAM-e General Dimensions July 5, 2012



A15 - SAM-e (2549922) Shop Drawing

	Air	Air Pressure Loss [ in(mm) of water column ]									
Air Velocity [ fpm (m/s) ]		SAM-e Tube Spacing									
[1]	3" (762 mm)	6" (152 mm)	9" (229 mm)	12" (305 mm)							
500 (2.5)	0.01 (0.3)	0.01 (0.3)									
750 (3.8)	0.03 (0.8)	0.01 (0.3)	No measurable data								
1000 (5.1)	0.05 (1.3)	0.02 (0.5)	No measu	rable data							
1250 (6.4)	0.07 (1.8)	0.03 (0.8)									
1500 (7.6)	0.09 (2.3)	0.04 (1.0)	0.01 (0.3)	0.01 (0.3)							
1750 (8.9)	0.10 (2.5)	0.06 (1.5)	0.01 (0.3)	0.01 (0.3)							
2000 (10.2)	0.12 (3.0)	0.08 (2.0)	0.01 (0.3)	0.01 (0.3)							



SAM-e Static Air Pressure Table July 15, 2016



## A16 - SAM-e (1503419) Description

Steam DISTRIBUTOR, Type B for SAM-e, 304ss, suitable for capacities up to 36 lbs/hr (16 kg/hr). Constructed of 1.5" O.D. (3.8 cm) high-grade stainless steel tubing, the distributors can accommodate duct heights between 24"-144" for in-duct header mounting, and between 18"-144" for outside duct header mounting. Each distributor has 48 stainless steel nozzles to evenly disperse steam into the duct or air handling unit.

The steam tubes come equipped with evenly spaced stainless steel nozzles providing optimum steam distribution, over the entire length of tube. These nozzles extend into the center of the steam tube ensuring only condensate-free steam is released. Condensate drains out of the steam tubes, and through the header, eliminating the need for jacketed tubes. A permanent bond between the nozzle and steam tube is made when the nozzle is hydraulically pressed into the tube. They have the same thermal expansion characteristics guaranteeing a permanent union. The specifically sized orifices ensure consistent output from each nozzle.

Steam distributors are available with optional 304 stainless steel insulation. Tube insulation consists of two 304 stainless steel shields, which are clamped onto the distributor tubes forming an insulating air gap around the tube while leaving a small gap for the nozzles to release steam. For tube insulation, contact and heat transfer between stainless steel shields and distributor to be limited using a 'knife edge' type angled contact. The air gap reduces heat transfer through conduction and convection, while the reflective surfaces minimize heat transfer through radiation.

#### **FEATURES**

- Capacities of 36 lbs/hr (16 kg/hr) per tube.
- Nozzle design ensures only condensate-free steam is dispersed and prevents spitting.
- Stainless steel nozzles are pressed into tube ensuring permanent bond.
- Available insulation improves energy efficiency by as much as 70%.
- · Can be retrofit with insulation in the field.
- Maintenance free.
- · Ten year limited warranty.



## A17 - SAM-e (1503419) Shop Drawing

## 304 SS SAM-e Short Absorption Manifold Tubes

In-Duct Height Including Header in (cm)	Type A 15 lbs/hr (7 kg/hr)	Type B 35 lbs/hr (16 kg/hr)	Type B+ 55 lbs/hr (25 kg/hr)	Type C 75 lbs/hr (34 kg/hr)	"L" Dimension in (cm)	In-Duct Optional Mounting Frame	Steam Tube Profile
18 (45.7)	1503388	N/A	N/A	N/A	5.5 (14.0)	4504607	
24 (61.0)	1503389	1503411	N/A	N/A	11.5 (29.2)	1504697	<b>↑</b>
30 (76.2)	1503390	1503412	1509391	N/A	17.5 (44.5)	1502460	
36 (91.4)	1503391	1503413	1509392	1503440	23.5 (59.7)	1503469	0
42 (106.7)	1503392	1503414	1509393	1503441	29.5 (74.9)		
48 (121.9)	1503393	1503415	1509394	1503442	35.5 (90.2)	1502470	0
54 (137.2)	1503394	1503416	1509395	1503443	41.5 (105.4)	1503470	0
60 (152.4)	1503395	1503417	1509396	1503444	47.5 (120.7)		
66 (167.6)	1503396	1503418	1509397	1503445	53.5 (136.9)		0
72 (182.9)	1503397	1503419	1509398	1503446	59.5 (151.1)		
78 (198.1)	1503398	1503420	1509399	1503447	65.5 (166.4)		0
84 (213.4)	1503399	1503421	1509400	1503448	71.5 (181.5)	1503471	0
90 (228.6)	1503400	1503422	1509401	1503449	77.5 (196.9)		
96 (243.8)	1503401	1503423	1509402	1503450	83.5 (212.1)		0
102 (259.1)	1503402	1503424	1509403	1503451	89.5 (227.3)		
108 (274.3)	1503403	1503425	1509404	1503452	95.5 (242.6)		0
114 (289.6)	1503404	1503426	1509405	1503453	101.5 (257.8)		
120 (304.8)	1503405	1503427	1509406	1503454	107.5 (273.1)		0
126 (320.0)	1503406	1503428	1509407	1503455	113.5 (288.3)	1503472	0
132 (335.3)	1503407	1503429	1509408	1503456	119.5 (303.5)		▼
138 (350.5)	1503408	1503430	1509409	1503457	125.5 (318.8)		
144 (365.8)	1503409	1503431	1509410	1503458	131.5 (334.0)		



304 SS SAM-e Short Absorption Manifold Tubes July 5, 2012



## A18 - SAM-e (2538853) Description

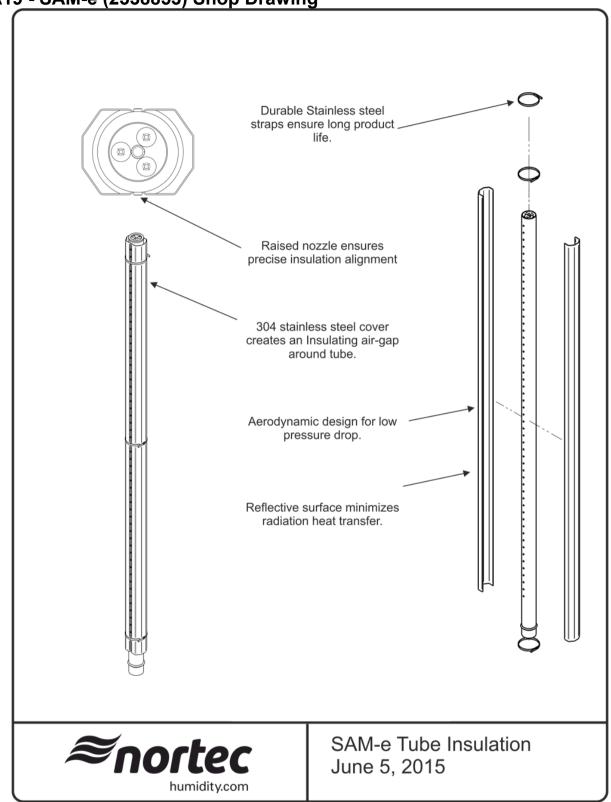
<u>SAM-e Tube Insulation (1 req'd for each tube)</u>, compatible with all SAM-e and mini SAM-e tubes. Constructed high quality 304 stainless steel, this shielding provides an insulating air gap around the steam tubes. The insulating air-gap significantly reduces energy losses from hot distributor tubes. Insulation can be factory installed on new orders or easily retrofit to existing installations. When ordering, order insulation to match tube length.

#### **FEATURES**

- Improve energy efficiency by as much as 70%.
- Reduce condensate losses.
- · Minimal heat gain into air-stream.
- · Aerodynamic design minimizes pressure losses.
- Fiberglass free and non-hygroscopic for hygienic operation.
- · Easily retrofit to existing installations.
- Maintenance free.
- Tube insulation consists of two stainless steel shields that are clamped onto the distributor tubes, leaving a small gap for the steam nozzles to release steam. Contact and heat transfer between the insulating shields and the tube is prevented by using an angled knife edge along each shield. The resulting air gap around the tube reduces heat transfer through conduction and convection, while the reflective surfaces minimize heat transfer through radiation.



A19 - SAM-e (2538853) Shop Drawing



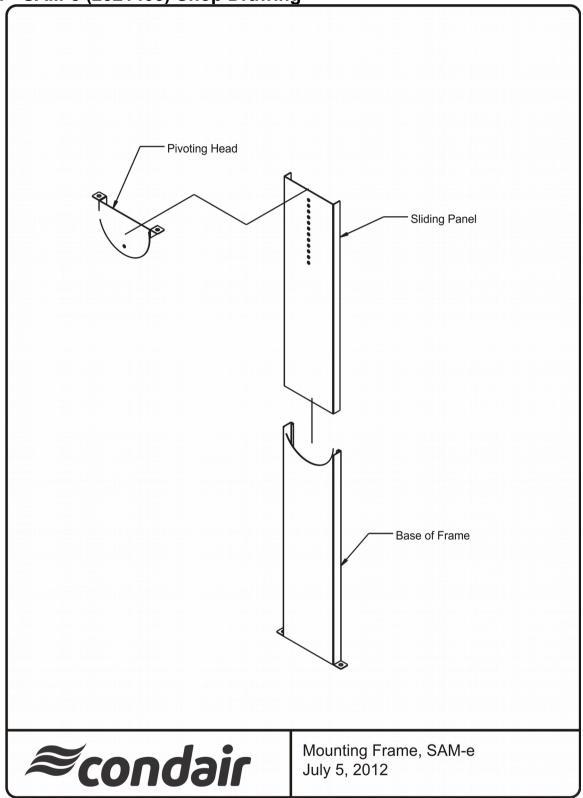


## A20 - SAM-e (2521405) Description

**Mounting FRAME, Adjustable for SAM-e**, Constructed of stainless steel, the mounting frame provides support and allows for a quick and easy installation. The telescopic frame can be adjusted to suit the duct or air handling unit. The mounting frame is optional for horizontal duct applications, but required for vertical duct applications.



A21 - SAM-e (2521405) Shop Drawing





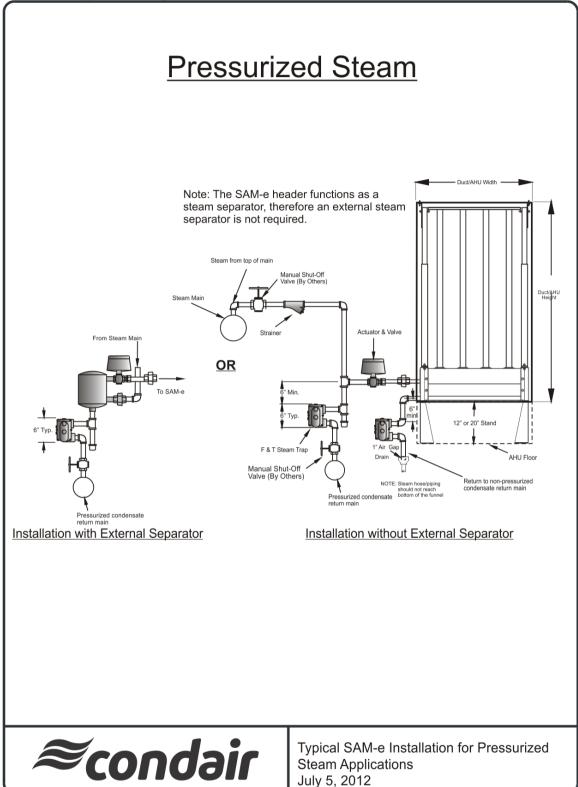
## A22 - SAM-e (1503476) Description

Pressure Inlet Adapter Kit for SAM-e

Provides an NPT threaded connection for connecting a SAM-e Short Absorption Manifold to a LiveSteam or pressure steam system. Inlet adapter kits are constructed from high quality stainless steel and are factory welded to the SAM-e header. Pressure inlet kits also include an internal baffle to separate steam from condensate allowing operation without the need for an external separator.

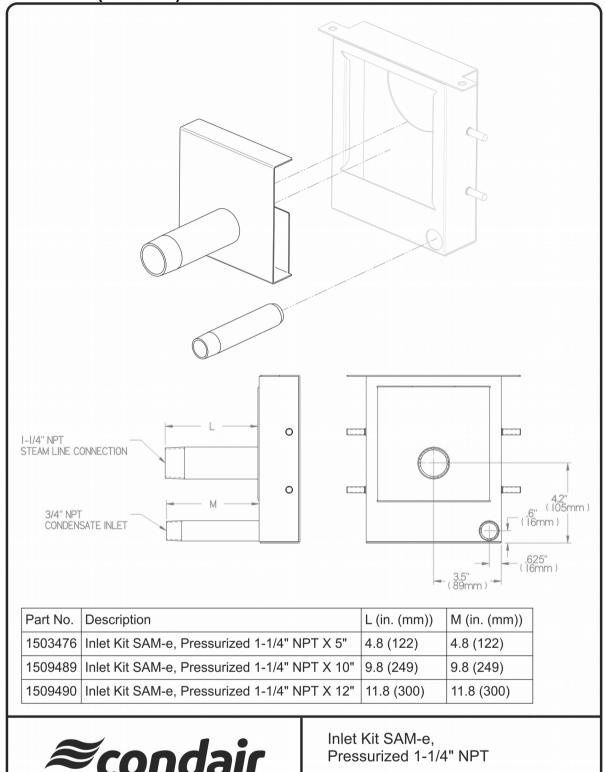


## A23 - SAM-e (1503476) Installation





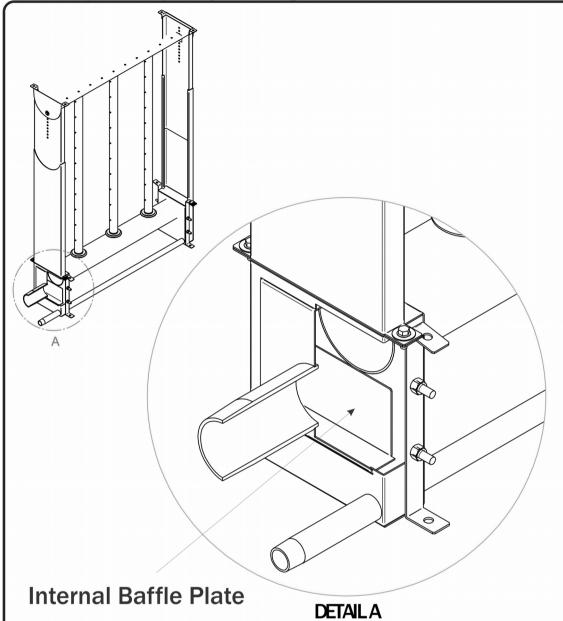
## A24 - SAM-e (1503476) Schematic







A25 - SAM-e (1503476) Shop Drawing



All pressurized SAM-e inlet kits come with a standard internal baffle plate. The baffle plate redirects the flow of steam causing condensate to 'fall out', eliminating the need to install an external steam separator.



SAM-e Internal Baffle Plate July 5, 2012



## A26 - SAM-e (2591657) Description

<u>SAM-e Top Center Mount Bracket</u>; provides additional support and rigidity for cases where a SAM-e will be shipped fully assembled insided of an air handling unit. This option is typically used when shipping the SAM-e for installation at an Air Handling Unit manfuacturer.



A27 - SAM-e (2591658) Description

SAM-e Side Yoke (x2), provides an additional two adjustable side yokes. This can be used as either a replacement for existing yokes, or to double up the existing yokes for additional strength.



## A28 - SAM-e (1503391) Description

Steam DISTRIBUTOR, Type A for SAM-e, 304ss, suitable for capacities up to 15 lbs/hr (7 kg/hr). Constructed of 1.5" O.D. (3.8 cm) high-grade 304 stainless steel tubing, the distributors can accommodate duct heights between 18"-144" for in-duct header mounting, and between 8"-144" for outside duct header mounting. Each distributor has 20 stainless steel nozzles to evenly disperse steam into the duct or air handling unit.

The steam tubes come equipped with evenly spaced stainless steel nozzles providing optimum steam distribution, over the entire length of tube. These nozzles extend into the center of the steam tube ensuring only condensate-free steam is released. Condensate drains out of the steam tubes, and through the header, eliminating the need for jacketed tubes. A permanent bond between the nozzle and steam tube is made when the nozzle is hydraulically pressed into the tube. They have the same thermal expansion characteristics guaranteeing a permanent union. The specifically sized orifices ensure consistent output from each nozzle.

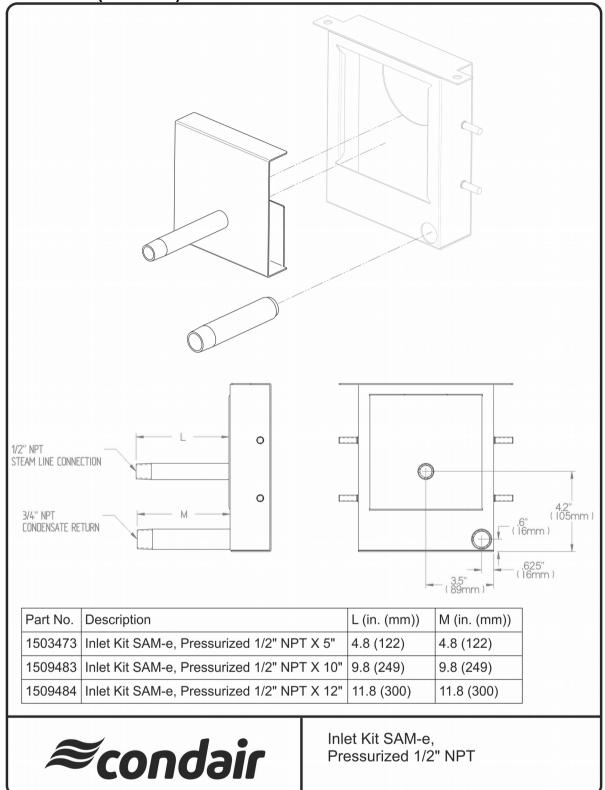
Steam distributors are available with optional 304 stainless steel insulation. Tube insulation consists of two 304 stainless steel shields, which are clamped onto the distributor tubes forming an insulating air gap around the tube while leaving a small gap for the nozzles to release steam. For tube insulation, contact and heat transfer between stainless steel shields and distributor to be limited using a 'knife edge' type angled contact. The air gap reduces heat transfer through conduction and convection, while the reflective surfaces minimize heat transfer through radiation.

#### **FEATURES**

- Capacities of 15 lbs/hr (7 kg/hr) per tube.
- · Nozzles design ensures only dry steam is dispersed and prevents spitting.
- Stainless steel nozzles are pressed into tube ensuring permanent bond.
- Available insulation improves energy efficiency by as much as 70%.
- · Can be retrofit with insulation in the field.
- Maintenance free.
- · Ten year limited warranty.



## A29 - SAM-e (1503473) Schematic





## A30 - Mini SAM-e (2538925) Description

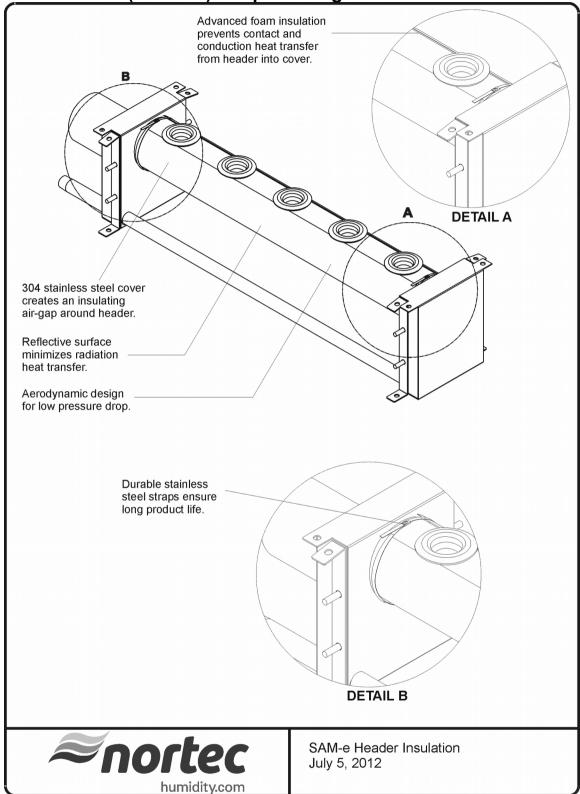
<u>SAM-e Header Insulation</u>, compatible with all SAM-e and mini SAM-e headers. Constructed from high quality 304 stainless steel, this shielding provides an insulating air gap around the header. The insulating airgap significantly reduces energy losses from hot distributor headers. Insulation can be factory installed on new orders or easily retrofit to existing installations. When ordering, order insulation to match header length.

#### **FEATURES**

- Improve energy efficiency by as much as 70%.
- · Reduced condensate losses.
- · Minimal heat gain into air-stream.
- · Aerodynamic design minimizes pressure losses.
- Fiberglass free and non-hygroscopic for hygienic operation.
- Easily retrofit to existing installations.
- · Maintenance free.
- Header insulation consists of a stainless steel shield that is clamped onto the distributor header, leaving a small gap for the steam tubes to protrude. Contact and heat transfer between the insulating shield and the tube is prevented by using strips of synthetic foam insulation. The resulting air gap around the header reduces heat transfer through conduction and convection, while the reflective surfaces minimize heat transfer through radiation.

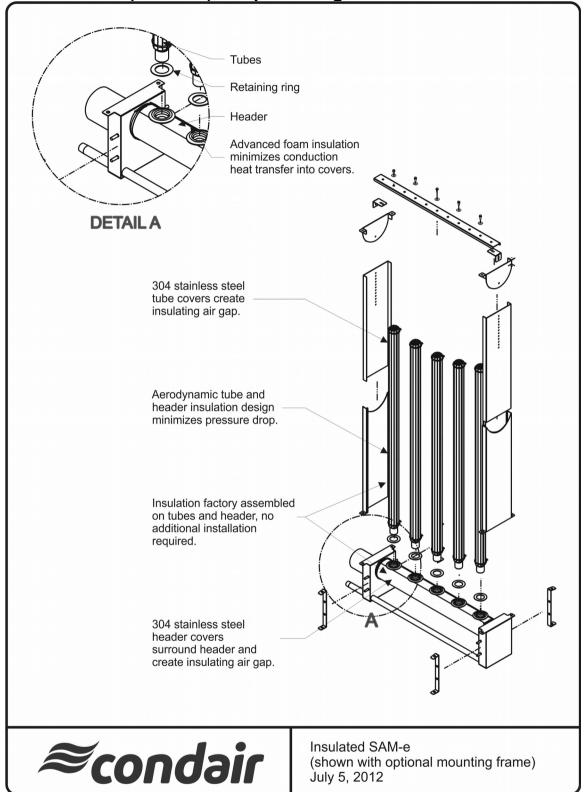


A31 - Mini SAM-e (2538925) Shop Drawing





## A32 - Mini SAM-e (2538925) Shop Drawing





#### **TERMS & CONDITIONS OF SALE**

#### PRICES:

All prices are LIST price. All prices and discount factors are subject to change without notice.

#### **ORDERS:**

All orders must be in writing (made out to Condair Inc. or Condair Ltd. hereinafter collectively referred to as Condair) or submitted through Help software, and are subject to acceptance by Condair's Credit Manager prior to production release and are contingent upon governmental regulations, availability of labor and materials, strikes, accidents, fires, and all other causes beyond the control of Condair.

#### SHIPPING TERMS:

Shipping Terms: All packaged goods, (electric and gas-fired) humidifiers, SAM-e, Livesteam distribution systems, HP, ML and AirFog, are shipped FOB factory, standard ground freight included to the continental United States and Canada. Parts orders that are over \$1,000 net invoice value are shipped freight included. All air freight charges are extra. Export crating and export shipping costs are extra.

#### **RISK OF LOSS & DAMAGE:**

Risk of loss or damage passes to the Buyer when the equipment described herein is delivered to the carrier. Any claim for goods lost or damaged in transit, shall be made by the Buyer against the carrier.

#### **CHANGED OR CANCELLED ORDERS:**

- All changed or cancelled orders, in production or completed, are subject to a charge of 30%.
- Orders other than "Quick Ship Orders" for packaged products (e.g. electric, gas-fired) may generally be cancelled within 48 hours of being placed. Condair will make every effort to stop production of an order upon written notice of cancellation. If production has not started, Condair will waive the cancellation charge.
- Orders for equipment specially fabricated cannot be cancelled. E.g. SAM-e, LiveSteam, HP, ML, ME, and DL.
- Parts orders that are regular stock items are not subject to a cancellation charge. However, if a parts order is changed, which includes adding new parts to an order; this may cause a delay in delivery.

#### **RETURNED GOODS:**

- Condair will accept unused equipment returned for credit only when prior approval has been given. Prior to returning goods
  a Return Material Authorization Number (RMA) must be obtained and it must be clearly marked on all returned goods.
  Goods received without an RMA will not be accepted and credit will not be issued. Any material accepted for return must be
  shipped back prepaid by the Buyer and must reach Condair without damage.
- An RMA will only be issued within 3-months of the equipment's shipping date.
- Any unused equipment accepted for return is subject to a 30% restocking charge.
- Equipment specially fabricated, cannot be returned. E.g. SAM-e, Livesteam, HP, ML, ME, and DL.
- Credit will only be issued to the original purchaser.
- Credit will be issued in the form of a credit note, which can be used towards a future purchase.

## **WARRANTY - UNITS:**

Condair warrants for a period of two years after installation or 30 months from the manufacturer's ship date, whichever is earlier, that Condair's manufactured and assembled products, not otherwise expressly warranted, are free from defects in material and workmanship. No warranty is made against corrosion, deterioration, or suitability of substituted materials used as a result of compliance with government regulations. Extended warranties are available for most Condair manufactured products at the time of initial product order.

Condair's obligations and liabilities under this warranty are limited to furnishing replacement parts to the customer, F.O.B. Condair's factory, providing the defective part(s) is returned freight prepaid by the Buyer. Parts used for repairs are warranted for the balance of the term of the warranty on the original humidifier or 90 days, whichever is longer.



The warranties set forth herein are in lieu of all other warranties expressed or implied by law. No liability whatsoever shall be attached to Condair until said products have been paid for in full and then said liability shall be limited to the original purchase price for the product. Any further warranty must be in writing, signed by an officer of Condair. In no event will Condair be liable for any incidental, special, indirect or consequential damages or for loss of profits, business or goodwill whether based in contract or in tort or other liability to provide indemnification or any other remedy. This limitation applies whether or not Condair has been advised or is aware of the possibility of such damages.

Condair's limited warranty on accessories, not of Condair's manufacture, such as controls, humidistats, pumps, etc. is limited to the warranty of the original equipment manufacturer from date of original shipment of the products to the Buyer.

Condair makes no warranty and assumes no liability unless the equipment is installed in strict accordance with a copy of the catalog and installation manual in effect at the date of purchase and by a contractor approved by Condair to install such equipment. Condair makes no warranty and assumes no liability whatsoever for consequential damage or damage resulting directly from misapplication, incorrect sizing or lack of proper maintenance of the equipment. Condair retains the right to change the design, specification and performance criteria of its products without notice or obligation.

Extended warranties for 1, 2, or 3 additional years can be purchased at time of order only through Help Software.

Parts or materials that are considered consumables, including but not limited to: cylinders, filters, nozzles, membranes, media, gaskets, O-rings, etc. are NOT covered by the warranty.

Condair makes no warranty and assumes no liability whatsoever for damage resulting from freezing of the humidifier, supply lines, drain lines, or quality of the water used.

#### **REPLACEMENT PARTS:**

- All requests for replacement parts, whether they are for warranty consideration or not, require a covering purchase order, prior to Condair releasing the goods. Goods will be shipped to the Buyer with an invoice.
- To obtain credit for parts covered by Condair's warranty, defective parts must be returned for inspection. To return parts the
  Buyer must request a Return Material Authorization (RMA) and it must be clearly marked on all returned parts. Parts
  returned without an RMA will not be accepted and credit will not be issued. All parts returned for credit must be shipped
  back prepaid by the Buyer.
- All parts must be returned within 3-months of an RMA being issued. Parts returned more than 3-months from when the RMA was issued will not be accepted.
- Credit for parts covered under warranty will be issued, if inspection indicates the returned parts are defective.

### **PAYMENT:**

Terms of payment are net 30 days from date of invoice, unless otherwise specified. The offer of these terms is contingent upon approval by the Credit Manager at the time of receipt of the Buyer's official order. The Buyer agrees that interest on all overdue accounts may be charged monthly at a rate of 2.0% per month (24% per annum). Maintaining good credit will assist in meeting delivery. For quick ship orders, contact factory for pricing.

## Bernhard Cx Group

# **Bernhard**

Commissioning Review of Submittal Data for Construction

This submittal has been reviewed by the Commissioning Provider for general conformance related to the commissioning requirements in the contract documents and Owner's Project Requirements document. This review is not intended to verify overall equipment compliance of the design intent and no design direction shall be inferred or implied.

The Designer of Record shall verify overall compliance of the design intent according to the contract documents.

Y	4	Reviewed with Comments	12/10/24
		Reviewed with Comments	_
	4	Reviewed with No Comments	

Commissioning Review Comments are enclosed.

CLARK & ENERSEN: SEE ALL COMMENTS WITHIN.

1. UPDATE PERFORMANCE OF ALL COMPONENTS TO 300' ELEVATION

PROVIDE FACTORY MOUNTED ISOLATION DAMPERS ON DISCHARGE OF AH-2, AND BOTH INLET AND DISCHARGE OF AH-5A/5B

- 2. PROVIDE 0.035" TUBES ON ALL HEAT RECOVERY COILS
- 3. INLCUDE DIRTY APD LISTED ON FILTER SECTION IN TOTAL STATIC PRESSURE OF UNITS AND SIZE FANS ACCORDINGLY.
- 4. CONFIRM UV LIGHTS INCLUDED HAVE FUNCTIONALITY OF DETAIL 3/M6.01.
- 5. PROVIDE MINIMUM 9.12" TSP ON AH-2 PER SCHEDULE.
- 6. PROVIDE MINIMUM 8.55" TSP ON AH-5A/5B PER SCHEDULE.
- 7. PROVIDE PIPING AND COIL CONNECTIONS ON OPPOSITE SIDES FOR AH-5A VS AH-5B PER PLANS.
- 8. PROVIDE RECOMMENED DOOR SWINGS AS NOTED WITHIN,
- 9. CONFIRMING WITH OWNER IF 93% REDUNDANCY IS ACCEPTABLE FOR AH-2 SUPPLY FANS. WHAT OPTIONS ARE THERE TO ACHIEVE FULL N+1 WITH THE MOTORS?

REVIEWED	REVIEWED AND NOTED
REVISE AND RESUBMIT	REJECTED
this review do not relieve corequirements of the drawings is only for review of general coof the project and general or given in the contract doci responsible for confirming and dimensions; selecting fabricatic construction; coordinating the	e on the shop drawings during intractor from compliance with and specifications. This check informance with design concept impliance with the information uments. The contractor is discontinuous all quantities and on process and techniques of ir work with that of all other work in a safe and satisfactory
CLARK &	ENERSEN
<sub>By</sub> <u>csharp</u>	Date01/08/2025



## CDI Contractors, LLC 3000 Cantrell Road Little Rock, Arkansas 72202 501 / 666-4300

Transmittal No 2024.11.25-4

RE: 23 73 13 - Air Handling Units

PROJECT: UAMS- CAMID DATE: Nov 25, 2024

To: UAMS 4301 W MARKHAM ST. SLOT 545

LITTLE ROCK AR 72205

US

ATTN: TAMARA BARRON JOB: 240147

WE ARE SENDING:		SUBMITTED FOR:				ACT	ACTION TAKEN:		
	Shop Drawings	<b>/</b>	Approval				Approved as Submitted		
	Letter		Your Use				Approved as Noted		
	Prints		As Requested			Returned After Loan			
	Change Order		Review and Comment			Resubmit			
	Plans						Submit		
	Samples	SEN	T VIA:				Returned		
	Specifications		Attached		Separate Cover		Returned for Corrections		
	Other:					Due Dec 09, 2024			
$\overline{}$	Submittal:						Other:		

Line	Item	Package	Code	Rev.	QTY	Date	Description	Status
1	Submittal		237313-02	1		Nov 25, 2024	PD:AHU - 5A	Submitted
2	Submittal		237313-01	1		Nov 25, 2024	PD:AH - 2	Submitted
3	Submittal		237313-03	1		Nov 25, 2024	PD:AHU - 5B	Submitted

REMARKS:

CC:

CLARK & ENERSEN, Mark Huettner

Signed:	
---------	--

MATTHEW HUGHES





## Quality People. Building Solutions.

Comfort Systems USA (Arkansas), Inc. P.O. Box 16620 Little Rock, AR 72231 Phone 501-834-3320 Fax 501-834-5416

Date: 11/20/2024

Return Request: 11/30/2024 Project: UAMS (CAMID) Supplier: Harrison Energy Manufacturer: Daikin

**Submittal:** Air Handling Units **Submittal Number:** 23 73 13-01

**Drawing # and Installation:** Mechanical Drawings

### **ARCHITECT**

Clark Kenersen 2020 Baltimore Avenue, Suite 300 Kansas City, MO 64108 816-474-8237

## **GENERAL CONTRACTOR**

CDI Contractirs 3000 Cantrell Rd. Little Rock, AR 72202 501-666-4300

### **ENGINEER**

Clark Kenersen 2020 Baltimore Avenue, Suite 300 Kansas City, MO 64108 816-474-8237

## **MECHANICAL SUBCONTRACTOR**

Comfort Systems USA (Arkansas), Inc. 9924 Landers Rd. N. Little Rock, AR 72117 501-834-3320

CSUSA PROJECT NO. 22-6069

sean@comfortar.com

## Submittal



Prepared For: Date:

Clark & Enerson November 1, 2024

Sold To: Job Name:
Comfort Systems USA UAMS CAMID

Harrison Energy Partners is pleased to provide the enclosed submittal for your review and approval.

**Qty.** Product Summary

2 Daikin Air Handling Units

Josh Robinson | Sales Engineer Harrison Energy Partners 1501 Westpark Drive, Suite 9 Little Rock, AR 72204-2457 Ph. 501-539-0633 The attached information describes the equipment we propose to furnish for this project, and is submitted for your approval.

**Indoor Air Handling Units** 

Tag	Qty.	Description	Model Number
AHU-2	1	Indoor Air Handling Unit	Daikin CAH064
AHU-5	1	Indoor Air Handling Unit	Daikin CAH011

- Double wall construction with 2" R13 insulation
- ASHRAE leakage class 6
- Access sections with view ports and lights as required
- Stainless steel drain pans in humidifier and cooling coil sections
- 8" base rail
- Galvanized steel interior liners
- Combination filter section
- Heat recovery coil section
- Steam IFB coil section
- Humidifier section
- · Chilled water coil section with UV lights
- Supply fan section
  - NOTE: AHU-5 is selected as a stacked unit. Software limitations only allow us to select one section with a supply fan, therefore one of the supply fan sections is labeled "return/exhaust." Both fan sections in this unit will be utilized as supply fans.





## **SUBMITTAL DATA**

Job Name UAMS CAMID

For

Sold To

**Prepared For** 

**Customer PO#** 

Prepared By Jake Skinner

Date 11/1/2024

## AHU-2

## **Technical Data Sheet**

Job Information

Job Name UAMS CAMID

Date November 01 2024

Submitted By JS

Software Version 13.43

Unit Tag AHU-2

LENGTH IS TOO LONG FOR END DUCT CONNECTION. CAN LARGE DISCHARGE PLENUM BE ADDED AND FIELD CUT TO

EITHER TOP OR END DUCT CONNECTION?

**Technical Data Sheet** 



Unit Overview									
Model Number	Air Volume	Static P	ressure	External Dimensions					
Wodel Wallbei	cfm	External	Total	Height	Width	Length			
		inWc	inWc	in	in	in			
CAH064GDHM	26000	4.25	8.35	92*	124*	334			
*Not including base rails, coil connectors, drain connectors and control boxes.									

Unit						
Model Number:	CAH064GDHM					
Approval:	ETL Listed / ETL Listed to Canadi	an Safety Standards (ETL Label / E	TLc Label)			
Construction:	High pressure low leakage construction					
Outer Panel:	24 gauge G90 Galvanized Steel (unpainted)					
Liner:	24 gauge Galvanized Steel (unle	ss noted per section)	SELECT AT 300'			
Insulation:	R-13 Injected Foam					
Unit Configuration:	Inline horizontal	Drive (Handling) Location:	Left			
Base:	8" formed channel	Wall Thickness:	2 in			
Altitude:	0 ft	Parts Warranty:	Standard One Year			

Plenum Section	Component: 1	Length: 22 in		Shipping Section: 1					
Air Pressure Drop									
	0.06 inWc								
		Custom Openings							
Custom Opening	Location	Width	Height	Rainhood w/Screen					
1	End	108 in	34 in	None					
		Door							
Location	Width	Opening	Window Type	Light					
Drive side	18 in	Outward	Round	LED marine light kit and switch only					

Clarify if inlet isolation damper is provide/installed with unit or by others.

## **Technical Data Sheet**

Combination Filter			Component: 2			Length: 22 in			Shipping Section: 1		
Access			Face Velocity			Face Area			Air Volume		
	Side		39	3 ft/min		66.2 ft²			26000 cfm		
Portion	Туре	Efficiency		Air Press	ure Drop		Number of	Height	Width	Depth	
			Clean Air	Mean Air	Dirty Air	User Spec	Filters				
Pre-Filter	Pleated	MERV 8	0.17 inWc	<b>0.58</b> inWc	1.00 inWc	N/A	18	24 in	20 in	2 in	
rie-riitei	rieateu	IVIERVO	O. I / ITIVVC	<b>0.36</b> INVVC	1.00 invvc	IN/A	5	12 in	24 in	2 in	
Filter	Varicel VXL	MERV 15	0.27 inWc	<b>1.13</b> inWc	2.00 inWc	N/A	18	24 in	20 in	12 in	
riitei	cartridge	IVIERV 13	U.Z7 INVVC	1.13 INVVC	2.00 invoc	IN/A	5	12 in	24 in	12 in	
					Door						
	Locatio	n			Width	dth Opening					
	Drive si	de			18 in	3 in Outward					
Special Options											
Sound Baffle						Filter Gauge					
		(As casing	details)			Magnehelic 0-5"					

Access Section	Component: 3	Length: 22 in	Ship	oing Section: 1
		Air Pressure Drop		
		0.00 inWc		
		Door		
Location	Width	Opening	Window Type	Light
Drive side	18 in	Outward	Round	LED marine light kit and switch only

Chilled Water	Coil		Comp	onent: 4			Length: 42 in				Shippir	ng Section	: 2	
Coil Model	Total Cap	acity	Sensik	ole Capacity	Numb	er of Coils	Number of Rows		Fins per Inch Tub		Tube	Diameter		Tube Spacing (Face x Row)
5WL1208B	3562991	3tu/hr	3562	356299 Btu/hr		2	8		12	0.6		625 in	1.5	0 in x 1.299 in
Air Volume			Air Tem	perature			Coil Air		Finned		Finned Face		rea	Face
	Ente	ring		L	eaving		Pressure		Height	Ler	ngth			Velocity
	Dry Bulb	Wet	Bulb	Dry Bulb	'	Wet Bulb	Drop							
26000 cfm	99.6 °F	77.:	2 °F	87.1 °F		73.8 °F	0.69 inWc		39 in	11	1 in	60.12	ft²	432 ft/min
	Fluid			Flow Rate	е	Pressui	re Drop	'	Velocity		Volum	ie		Weight
Entering	Le	eaving												
82.9 °F	9	5.4 °F		60.00 gp	m	8.60	ftHd	1	.70 ft/s		61.0 g	al		514.00 lb
	Conn	ection [[	Data Pe	r Coil]			Glycol Typ	е	Min. Fin Su	face		Tube Wall	I	Fouling Factor
Туре	Size		Lo	ocation	M	laterial			Temp.		Surfa	ce Temp.		
Threaded	2.50	in	Dri	ive side	Carb	on steel	Propylen (30%)	е	82.9 °F	:	82	2.9°F		0.000
	$\sim$	~~	Mater	ial				D	rain Pan		Drain Si	de		Turbospiral
Fin		Tube		Header		Ca	ise							
Aluminum .007	5 <mark>n Copp</mark>	er .020	in $\prec$	Copper	-	Galv.	steel	Stair	nless steel		Drive s	ide		Yes
						AHRI 410 C	ertification							
Sc	chedules	speci	fv 0.	035"	Coil	is NOT cer	rtified by AH	RI						
		БРООТ				Do	or							
Locatio	n		W	idth		Ope	ning		Window	Туре			Li	ght
Drive si	de		20	) in		Outv	ward		Rour	nd				light kit and h only

## **Technical Data Sheet**

IFB Steam Coil	IFB Steam Coil Component: 5							Shipping Section	Shipping Section: 2		
Coil Model	Total Capacit	y Numb	er of Coils	Number of Rows		Fins po	er Inch	Tube Diameter	Tube Spacing (Face x Row)		
AMX12CE103.469. 01	1546300 Btu.	/hr	1		1	1	2	0.625 in	1.50 in x 1.299 in		
Air Volume	Air Temperature			ir Pressure	Finned H	eight	Finned Length	Face Area	Face Velocity		
	Entering Dry Bulb	Leaving Dry Bulb		Drop							
26000 cfm	17.6 °F	72.7 °F	0.1	15 inWc	69 ii	n	99 in	47.63 ft²	548 ft/min		
		Flui					Max	Superheat Temp.	in Steam Coil Inlet		
Stea	ım Pressure			Condens	ate Load						
1.	5.00 psig		1620.58 lb/hr				30.0 °F				
			C	Connection [	Data Per Coi	]					
Туре		Steam Size		Condens	sate Size		Location		Material		
Threaded		3.00 in		2.5	0 in		Drive side		Carbon steel		
				Mat	erial						
Fin			Tube			Heade	r		Case		
Copper .0	12 in	Со	opper .035 in			Carbon Steel		Galv. steel			

Access Section	Component: 6	Length: 24 in	Shipping Section: 3							
	Air Press	sure Drop								
	0.00	inWc								
Door										
Location	Width	Opening	Light							
Drive side	20 in	Outward	LED marine light kit with GFI outlet							

Future Chilled Water Coil	Component: 7	Length: 38 in		Shipping Section: 3			
1	lumber of Coils		Number of Rows				
	2			2			
Coil Air Pressure Drop	Finned Height	Finned Width	Face Area	Face Velocity			
0.20 inWc	39 in	111 in	60.12 ft <sup>2</sup>	432 ft/min			
Cor	nnection Location		Connection Material				
	Drive side		Carbon steel				
Coil Model		Drain Pan		Drain Pan Side			
Future Coil (Not Si	upplied)	Stainless steel	ess steel Drive side				
		AHRI 410 Certification	10 Certification				
		Coil is NOT certified by AHI	રા				
		Door					
Location	Width		Opening Light				
Drive side	22 in	(	Outward	LED marine light kit with GFI outlet			

Humidifier Section.
Humidifier manifold to be factory installed. Performance data is located at the end of this submittal

BOBKVU UAMS CAMID 6 11/1/2024

## AHU-2

**BOBKVU** 

**UAMS CAMID** 

7

11/1/2024

Confirm UVC light control panel furnished with unit meets the requirements in drawing detail.

Technical Data Sheet

							uela					
	Chilled Wate	r Coil		Component: 8		Length	n: 48 in			Shipping Se	ction: 4	
	Coil Model	Total Cap	pacity S	Sensible Capacity	Number of (	Coils Numb	er of Rows	Fins per Ir	nch	Tube Diam	neter	Tube Spacing (Face x Row)
	5WD0812B	2244626	Btu/hr 1	1352153 Btu/hr	2		12	8		0.625	in 1	.50 in x 1.299
	Air Volume	Ente	Ai ering	ir Temperature	Leaving		l Air ssure	Finned Height	Finned Length		ace Area	Face Velocity
		Dry Bulb	Wet Bu	ulb Dry Bulk	•	_	op			<b>9</b>		10.00,
	26000 cfm	99.6°F	77.2	_			inWc	39 in	111	l in d	0.12 ft²	432 ft/mii
		Water		Flow Ra		Pressure Drop		Velocity		Volume		Weight
	Entering	L	eaving			•						J
	45.0 °F	5	9.2 °F	315.70	gpm	14.30 ftHd		3.30 ft/s		92.0 gal		768.00 lb
			Connection	on [Data Per Coil]			Mii	n. Fin Surface		in. Tube Wal		ouling Factor
	Туре		Size	Locatio		Material		Temp.	Su	urface Temp.		
	Threaded	2	2.50 in	Drive s	ide C	arbon steel		45.0 °F		45.0 °F		0.000
				Material			_		Drain	Pan		Orain Side
	Fin Aluminum C	107E :	Tube		Header		Case	-l C+	talplac	o otool		rive side
	Aluminum .0	1075 IN	Copper .	020 in	Copper	410 Certificat	Galv. stee	el 5	tairiies	ss steel	L	rive side
rec	CERTIFIE was abridientity of Al-Cooling and As-hashing Cale desistands of 10  Aurices N+1	whic	h is base Sta	ordance with the don AHRI Stan andard. Certifically 100%	dard 410 w	thin the Rai	nge of St	andard Ratin	g Cond	ditions list	ed in Tal ctory.org	ole 1 of the
	ncy. Conf					Opening		Window				ight .
	incy is Drive			20 in		Outward		Rour	nd		UVC	Lights
				C 10		1 2 2 2 1	n: 42 in			Claire raine as Co	-#: F	
	Supply Fan A	ırray		Component: 10						Shipping Se	ction: 5	
	Air	Static Pr	occuro	Fan Energ		n Performance Fan Shaft		eed	Dodur	ndancy(N-1)		Fan Circuit
	Volume*	ternal Tot		Index(FEI		Power*	·	Maximum	Redui	idancy(N-1)	МС	
	6500 cfm 4.2				41.7 kW	12.68 BHP 3			7	93.4 %	90.0	
						Fan Data	·					
is r	norethan	0.75'bles	sethar	Quantity o	f Fans W	heel Diameter	r Nun	nber of Blades		Discharge	N	lotor Location
gn.	Clamby /is	his is Air	foil / 2	4		18.25 in		12		Axial		Behind Fan
	ble.					Motor Data						
•	Power	Electrical Supply	Spee	ed Efficienc	y Enclos	ure Fram	e Size	Supplier	Numb Pol		ck Rotor current*	Full Load Current*
	15.0 HP	460/60/3 V/Hz/Phase	3500 r	rpm Premiui	m ODI	215 T	frame	Generic	2	! 1	11.01 A	17.50 A
		V/HZ/FHase				Fan Options						
	Isolatio	n Backdraft Da	mnore:	Provided		· air Options		Block Off I	Diate.	None		
	isolatio	Piezomete	-	1 ring per fan				Piezometer De		16.26		
		i iczonicte		Provided				Isolator		Spring		
		Shaft Ground		ovided	VFD/Sta	rter/Disconne	ct Data	isolatol	. <del>, , , .</del> .	opring		
		Shaft Ground					utu					
				MMP I-Roy	VI 27 Ota	TCI7 DISCOTIFIC		Vo	ndor.	Factory S	tandard	
		Selection	n Type:	MMP J-Box	VI D/ Ota	Ter/Disconne			ndor:	Factory S	tandard	
	Не	Selection VFD I	n Type: Power:	15 HP		iter/ Disconne		Vol	ltage:	460 v		
	He	Selection VFD I light x Width x	n Type: Power: Depth:	15 HP 15.75 in x 11.81		iten/bisconne			ltage:	-		
	He	Selection VFD I light x Width x	n Type: Power: Depth:	15 HP				Vol	ltage:	460 v		
	Не	Selectior VFD I light x Width x Enc	n Type: Power: Depth:	15 HP 15.75 in x 11.81		Panel		Vol	ltage:	460 v Door Side	9	
		Selection VFD I light x Width x Enc Location	n Type: Power: Depth: losure:	15 HP 15.75 in x 11.81				Vol	ltage:	460 v Door Side		
		Selectior VFD I light x Width x Enc	n Type: Power: Depth: losure:	15 HP 15.75 in x 11.81		Panel Width	DI	Vol	Itage: nting:	460 v Door Side	ening ward	



### Technical Data Sheet



Unit Sound Po	ower (dB)							
Туре	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz
Radiated:	86	76	73	77	74	66	49	51
Unit Discharge:	91	81	83	92	90	88	81	74
Unit Return:	86	76	73	77	74	66	49	51

Shipping Se	ction Detai	S														
Section	Length	١	<b>Neigh</b>	t					Corner W	eights (lb)		Ce	Center of Gravity (in)			
	in		lb			P1			P2	P3	P4	XX	YY	ZZ		
1	66		1738	}	4	23			423	446	446	34	62	46		
2	78		5432		16	532		1	683	1085	1033	30	63	49		
3	62		1395	)	3	17			317	381	381	34	62	39		
4	48		3885	)	12	296		1	360	678	614	16	64	48		
5	80		4236	)	12	210		1	235	908	883	34	63	45		
<b>Entire Unit</b>	334	1	6686	6	39	926		4	1066	4450	4309	175	63	46		
22	22 22 42	36	24	38	48	14	42	24	ł	YY ( <del>)</del>						
92 Z X	CWC ACCESS PBFILT	IFB STC	<sub>ത</sub> ACCESS	CWC	QWC	MP ARRAY	FAN ARRAY	PLENUM	92	P2 P1	_	Air Flow	<b>→</b>	P3 P4		
X											→ xx	Plan View		ŭ		
	66	78 Ele	6 vatio		48 N	L	80		1							

NOTE: Special components aren't included in the corner weights and center of gravity data.

NOTE: Shipping weights listed do not include weight of water (listed in coil section(s) above.

## **Shipping Protection**

**Shipping Bag** 

*NOTE:* Shipping protection is not meant for long term storage.

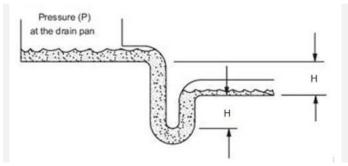
NOTE: In some instances a shipping bag cannot be applied. In these circumstances stretch wrap would be supplied.

#### **Technical Data Sheet**

Supply Static Pressure Drop		
Component	Option	Static Pressure Drop
Plenum Section	Plenum Section	0.06 insWg
Panel and Cartridge Filter	Panel and Cartridge Filter	1.72 insWg
Access Section	Access Section	
Chilled Water coil	Chilled Water coil	0.69 insWg
Steam Face and Bypass Coil	Steam Face and Bypass Coil	0.15 insWg
Access Section	Access Section	
Chilled Water coil	Chilled Water coil	0.20 insWg
Chilled Water coil	Chilled Water coil	1.03 insWg
Damper	Damper	
Supply Fan	Cabinet	0.01 insWg
Plenum Section	Plenum Section	0.24 insWg
External Static	External Static	4.25 insWg
Total Suppl	y Fan Static	8.35 insWg

## PROVIDE MINIMUM 9.12" TSP PER SCHEDULE.

Minimum Recommended Drain Pan Trap Dimensions											
Shipping Section	Component	Н									
2	Chilled Water coil	5.44									
3	Chilled Water coil	6.14									
4	Chilled Water coil	8.20									



Dimensions provided as a courtesy and are recommended minimums only. Daikin is not responsible for supplying or designing drain pan traps and is not responsible for any damage caused by incorrect trap heights. The dimensions listed above should be reviewed and approved by a licensed plumbing professional.

This calculation is based on an assumption that 0.25 inches of the external static pressure is in the return duct and the remainder is in the supply duct. If actual conditions vary from this assumption then contact Applications for new trap height recommendations.

### **AHRI Certification**



Certified by the AHRI Central Station Air-Handling Unit (AHU) Certification Program, which is based on AHRI Standard 430/431. AHRI certified units are subject to rigorous and continuous testing, have performance ratings independently measured and are third-party verified. Certified units may be found in the AHRI Directory at www.ahridirectory.org.

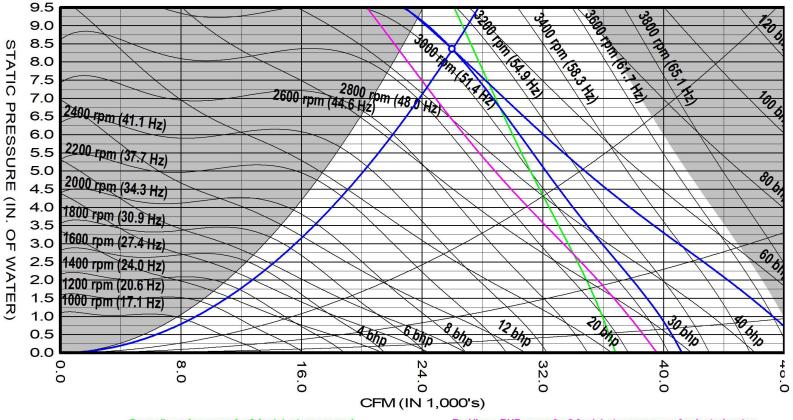
## Notes

#### Important

- 1. This unit may not meet ASHRAE Standard 90.1 2007 fan motor power limitations for the year and system selected. If that code applies, alternate fan selections may be required.
- 2. The designer and installer must ensure compliance with applicable codes. A component supplier cannot determine the brake horsepower ("BHP") for other motors in the air handling system.
- 3. Before approving this unit, determine whether ASHRAE Standard 90.1 2007 has been adopted in the specific jurisdiction or contract specifications in which the unit will be installed.

BOBKVU UAMS CAMID 9 11/1/2024





Green line = fan curve for 3 fan(s) at max speed

Red line = BHP curve for 3 fan(s) at max power of selected motor

Fan Curve

AF 18 DD PLEN	AF 18 DD PLENUM 12BL (100% Width) 2x2 Supply Fan at Standard Conditions											
Air volume	26000	cfm	Fan speed		3065	rpm						
Total static	8.35	insVVg	Max speed		3650	rpm						
Fan Shaft Power	50.7	bhp	Efficiency		67.4	%						
Approx VFD Setting	52.5	Hz	Motor Speed		3500	rpm						
Fan Energy Index(FEI)	1.25		Redundancy		93.4	%						
Unit tagging	AHU-2			Date	November-0	01-2024						
Job name	UAMS CAMI	D		Time	07:13							

Supply fan performance is certified in accordance with the Central Station

Air-Handling Unit Certification Program, which is based on AHRI Standard 430.

Model: CAH064GDHM

Nov. 1, 2024

Ver/Rev:

All opening dimensions have a 1" mounting flange along the inner edge. The actual airflow area of the opening is 2" smaller in each dimension.

Sheet: 1 of 1

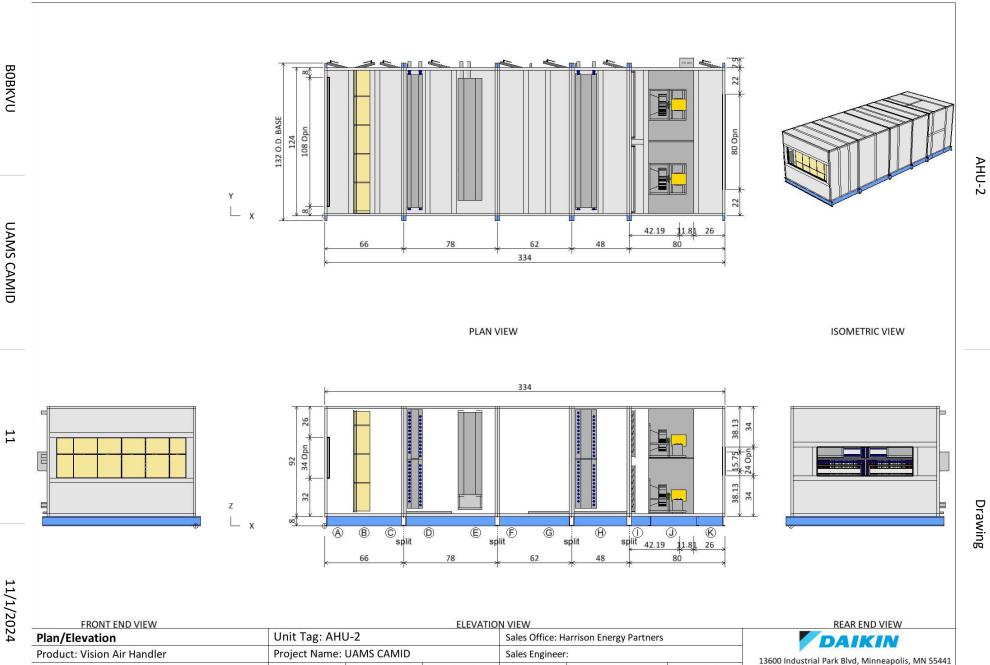
Scale: NTS

Tolerance: +/-0.25"

Dwg Units: in

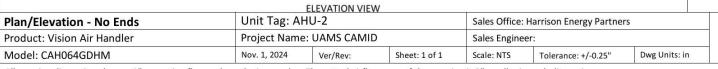
www.DaikinApplied.com

Software Version: 13.43



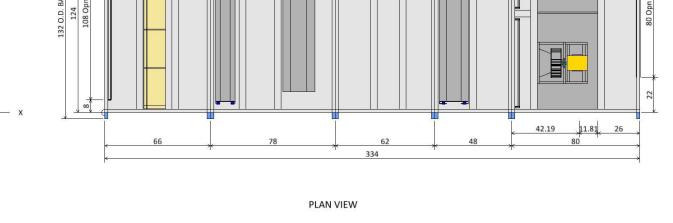


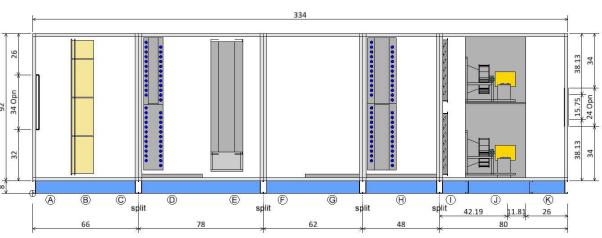
**BOBKVU** 



DAIKIN 13600 Industrial Park Blvd, Minneapolis, MN 55441 www.DaikinApplied.com Software Version: 13.43

All opening dimensions have a 1" mounting flange along the inner edge. The actual airflow area of the opening is 2" smaller in each dimension.





	Left Door (WxH):	18 ins x 88 ins
=	Access Section	
<u>C</u> )	Left Door (WxH):	18 ins x 68 ins
	Chilled Water coil	
0	Coil Model:	5WL1208B
رو	Total Capacity:	356299.0 Btu/h

Component Key

18 ins x 48 ins

Varicel VXL

Pleated (MERV 8)

Centrifugal - Plenum

20 ins x 48 ins

Left Door (WxH): 20 ins x 68 ins

Steam Face and Bypass Coi Total Capacity: 1546300.0 Btu/hr Access Section Left Door (WxH): 20 ins x 68 ins

Chilled Water coil 5WH0002C Coil Model: Total Capacity: 0.0 Btu/hr Left Door (WxH): 22 ins x 68 ins

Chilled Water coil Coil Model: 5WD0812B Total Capacity: 2244626.0 Btu/hr 20 ins x 68 ins Left Door (WxH):

(I) Damper Supply Fan Fan Type: Fan Size (Class):

Plenum Section Left Door (WxH):

Panel and Cartridge Filter Pre Filter Type:

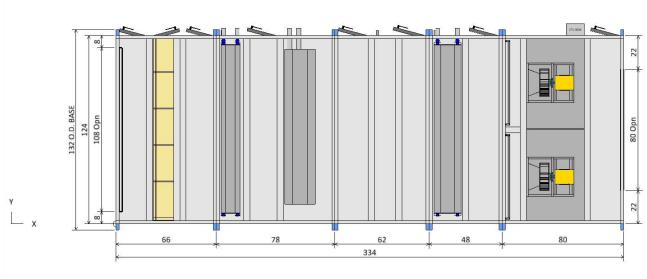
Cartridge Filter Type:

18 (2) Air Flowrate: 6500.0 cfm T.S.P: 8.3 insWg 15.0 HP Motor Power:

Plenum Section Left Door (WxH):

Drawing

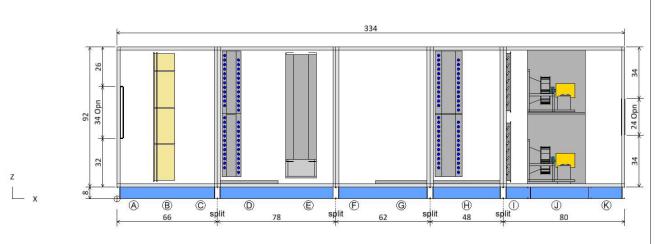
AHU-2



	Com	ponent k	(ey		
Туре	Х	Υ	Z	Wid	Hgt
Plenum Section     Opening	0.00	8.00	40.00	108.00	34.00
Plenum Section     Opening	334.00	22.00	42.00	80.00	24.00

Note: Dimensions are measured from the origin point. Note: Openings with or without dampers are recessed into the unit by approximately 1.75 in.

#### PLAN VIEW



EI	_EVA	ΓΙΟN	VIEW

Unit Tag: Al	Unit Tag: AHU-2			Sales Office: Harrison Energy Partners		
Project Name	Project Name: UAMS CAMID			Sales Engineer:		
Nov. 1, 2024	Ver/Rev:	Sheet: 1 of 1	Scale: NTS	Tolerance: +/-0.25"	Dwg Units: in	
	Project Name	Project Name: UAMS CAMI	Project Name: UAMS CAMID	Project Name: UAMS CAMID Sales Engine	Project Name: UAMS CAMID Sales Engineer:	

DAIKIN

13600 Industrial Park Blvd, Minneapolis, MN 55441 www.DaikinApplied.com Software Version: 13.43

All opening dimensions have a 1" mounting flange along the inner edge. The actual airflow area of the opening is 2" smaller in each dimension.



30"

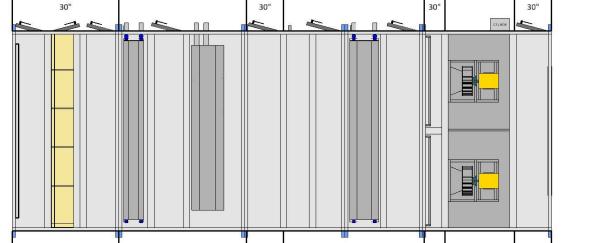
DAIKIN 13600 Industrial Park Blvd, Minneapolis, MN 55441 www.DaikinApplied.com Software Version: 13.43

All opening dimensions have a 1" mounting flange along the inner edge. The actual airflow area of the opening is 2" smaller in each dimension.

Notes

Check local electrical component service clearance codes for specific distances.

Access is only required on one side of the unit.



30"

124"

124"

124"

30"

124"

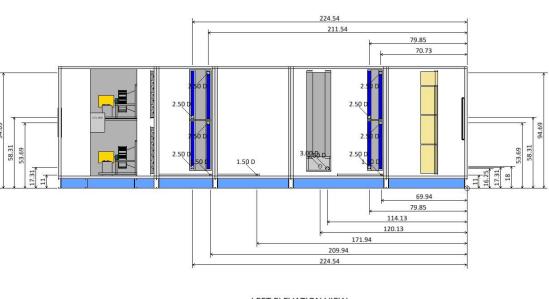
30"

124"

124"

Drawing

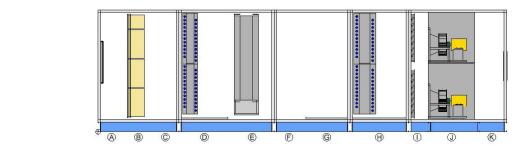
AHU-2



	Coil and D	rain Conn	ections		
	Туре	Х	Υ	Z	Diam
<b>(D)</b>	Chilled Water coil Condensate drain conn: Cold water inlet: Cold water outlet: Cold water inlet: Cold water outlet:	69.94 79.85 70.73 79.85 70.73	127.40 129.00 129.00 129.00 129.00	11.00 17.31 53.69 58.31 94.69	1.50 2.50 2.50 2.50 2.50
E	Steam Face and Bypass Coil Steam inlet: Steam outlet:	120.13 114.13	129.00 129.00	18.00 16.25	3.00 2.50
G	Chilled Water coil Condensate drain conn:	171.94	127.40	11.00	1.50
$\oplus$	Chilled Water coil Condensate drain conn: Cold water inlet: Cold water outlet: Cold water inlet: Cold water outlet:	209.94 224.54 211.54 224.54 211.54	127.40 129.00 129.00 129.00 129.00	11.00 17.31 53.69 58.31 94.69	1.50 2.50 2.50 2.50 2.50

Note: Dimensions are measured from the origin point.

**LEFT ELEVATION VIEW** 



RIGHT	<b>ELEVATION VIE</b>	W

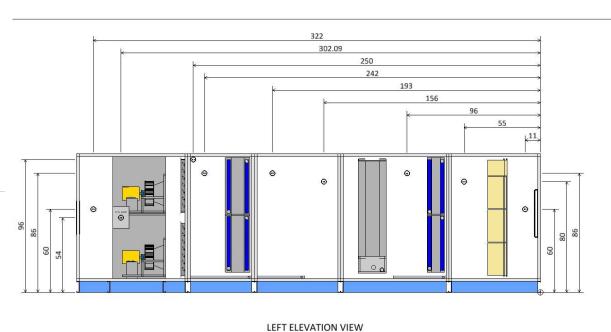
Unit Tag: Al	Unit Tag: AHU-2 Project Name: UAMS CAMID			Sales Office: Harrison Energy Partners Sales Engineer:		
Project Name						
Nov. 1, 2024	Ver/Rev:	Sheet: 1 of 1	Scale: NTS	Tolerance: +/-0.25"	Dwg Units: in	
	Project Name	Project Name: UAMS CAMII	Project Name: UAMS CAMID	Project Name: UAMS CAMID Sales Engine	Project Name: UAMS CAMID Sales Engineer:	



13600 Industrial Park Blvd, Minneapolis, MN 55441 www.DaikinApplied.com Software Version: 13.43

All opening dimensions have a 1" mounting flange along the inner edge. The actual airflow area of the opening is 2" smaller in each dimension.

AHU-2



		Com	ponent Ke	ey		
	Туре	Х	Y	Z	Volts	Phase
(A)	Plenum Section LED Marine Light	11.00	124.00	60.00	110	1
©	Access Section LED Marine Light	55.00	124.00	80.00	110	1
<b>(D)</b>	Chilled Water coil LED Marine Light	96.00	124.00	86.00	110	1
(F)	Access Section LED Marine Light GFI	156.00	124.00	80.00	110	1
<b>©</b>	Chilled Water coil LED Marine Light GFI	193.00	124.00	86.00	110	1
$^{\odot}$	Chilled Water coil LED Marine Light UVC Light	242.00 250.00	124.00 122.00	86.00 96.00	110 115	1
①	Supply Fan Fan	302.09	124.00	54.00	460	3
<u>(K)</u>	Plenum Section LED Marine Light	322.00	124.00	60.00	110	1

Note: Dimensions are measured from the origin point.

z				***************************************								
х	(A)	B	©	(D)	E L	Ē	©	$oldsymbol{eta}$	1	(J)	(K)	

<b>Electrical Connections</b>	Unit Tag: Al	Unit Tag: AHU-2			Sales Office: Harrison Energy Partners		
Product: Vision Air Handler	Project Name	Project Name: UAMS CAMID			Sales Engineer:		
Model: CAH064GDHM	Nov. 1, 2024	Ver/Rev:	Sheet: 1 of 1	Scale: NTS	Tolerance: +/-0.25"	Dwg Units: in	

13600 Industrial Park Blvd, Minneapolis, MN 55441
www.DaikinApplied.com Software Version: 13.43

All opening dimensions have a 1" mounting flange along the inner edge. The actual airflow area of the opening is 2" smaller in each dimension.

Drawing

22 22 22

**PBFILT** 

66

**ACCESS** 

PLENUM

92

Model: CAH064GDHM

42

CWC

78

36

IFB STC

Shipping Sections	Unit Tag: AHU-2	Sales Office: Harrison Energy Partners	
Product: Vision Air Handler	Project Name: UAMS CAMID	Sales Engineer:	

Ver/Rev:

38

CWC

62

24

ACCESS

48

CWC

48

Sheet: 1 of 1

42

FAN ARRAY

80

Scale: NTS

Tolerance: +/-0.25"

Dwg Units: in

24

PLENUM

14

5 MP ARRAY

Shipping Sections									
	Section	Weight (	lb)X	Υ	Z				
	Section 1	1737.72	66	124	92				
	Section 2		78	124	92				
	Section 3		62	124	92				
	Section 4		48	124	92				
	Section 5		80	124	92				
	Total Unit	16685.55	334	124	92				

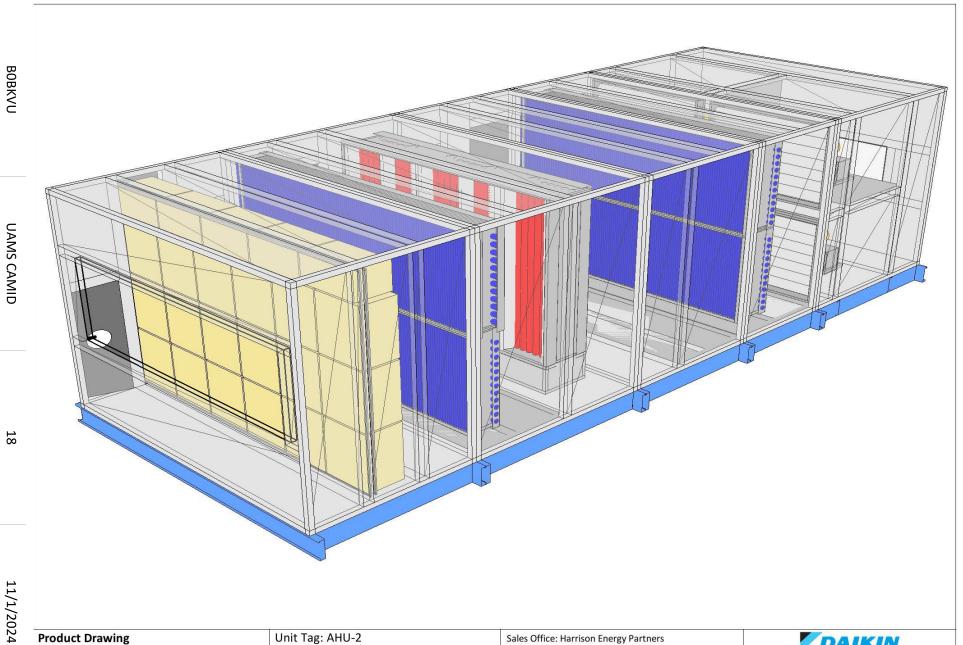
Note. base rails, curb ready base, coil conflectors, drain conflectors,
and control boxes not included in height X, Y, Z dimensions.
Shipping section may be 2" longer in air flow direction due to
internal splice joint.

DAI	KIN
13600 Industrial Park Blvd,	Minneapolis, MN 55441
www.DaikinApplied.com	Software Version: 13.4

All opening dimensions have a 1" mounting flange along the inner edge. The actual airflow area of the opening is 2" smaller in each dimension.

Nov. 1, 2024

Drawing



roduct Drawing Unit Tag: AHU-2 Sales Office: Harrison Energy Partners						DAIKIN			
Product: Vision Air Handler	Project Name	e: UAMS CAMI	D	Sales Engine	er:		13600 Industrial Park Blvd, Minneapolis, MN 55 www.DaikinApplied.com Software Version: 1		
Model: CAH064GDHM	Nov. 1, 2024	Ver/Rev:	Sheet: 1 of 1	Scale: NTS	Tolerance: +/-0.25"	Dwg Units: in			
All opening dimensions have a 1" mounting	g flange along the inner edge.	The actual airflo	ow area of the openi	ng is 2" smaller i	n each dimension.				





# **SUBMITTAL DATA**

Job Name UAMS CAMID

For

Sold To

**Prepared For** 

**Customer PO#** 

Prepared By Jake Skinner

Date 11/1/2024

### **Table of Contents**

Daikin Section Divider	3
Technical Data Sheet - AHU-5 Stacked	4
Fan Curve - AHU-5 Stacked	15
Drawing - AHU-5 Stacked	17

Floor plan indicates coil connections on opposite sides on top vs. bottom unit. Submittal shows coil/piping connections on same side of unit for both units. Coordinate LH vs. RH connections for each AHU.

Please clarify if humidifier condensate drain cooler shall be submitted here or separately.

### AHU-5 Stacked

### **Technical Data Sheet**

Job Information		Technical Data Sheet
Job Name	UAMS CAMID	
Date	November 01 2024	
Submitted By	JS	
Software Version	13.43	
Unit Tag	AHU-5 Stacked	



Unit Overview													
	Supply							Return/Exhaust					
Model Number	Air	Static P	ressure	Exteri	External Dimensions			Static Pressure		External Dimensions			
Wiodel Hamber	Volume	External Total		Height	Width	Length	Volume	<b>External</b>	Total	Height	Width	Length	
	cfm	inWc	inWc	in	in	in	cfm	inWc	inWc	in	in	in	
CAH011GDGM	3870	3.00	6.90	52*	48*	304	3870	3.00	7.07	52*	48*	304	
*Not including base ra	ails coil con	nectors drai	in connector	rs and contro	nl hoves								

Unit								
Model Number:	CAH011GDGM							
Approval:	ETL Listed / ETL Listed to Canadian Safety Standards (ETL Label / ETLc Label)							
Construction:	High pressure low leakage construction							
Outer Panel:	24 gauge G90 Galvanized Steel (unpainted)							
Liner:	24 gauge Galvanized Steel (unle	ss noted per section)						
Insulation:	R-13 Injected Foam							
Unit Configuration:	Stacked with parallel air flows	Drive (Handling) Location:	Right					
Base:	8" formed channel	Wall Thickness:	2 in					
Altitude:	0 ft	Parts Warranty:	Standard One Year					

Plenum Section	Component: 1	Length: 24 in		Shipping Section: 1					
		Air Pressure Drop							
0.12 inWc									
Custom Openings									
Custom Opening	Location	Width	Height	Rainhood w/Screen					
1	End	20 in	20 in	None					
		Door							
Location		Width		Opening					
Drive side	:	20 in		Outward					

Access Section Compone	nt: 2	Length: 24 in	Shipping Section: 1						
	ure Drop								
0.00 inWc									
	Do	or							
Location	Wi	dth	Opening						
Drive side	20	in	Outward						

Clarify if inlet air isolation dampers are provided with units or by others.

Combinati	on Filter		Component: 3		Lengt	h: 16 in		Shipping :	Shipping Section: 1			
	Access		Face	Velocity		Face A	rea		Air Volume			
	Front		558	3 ft/min		6.9 ft <sup>2</sup>			3870 cfm			
Portion	Туре	Efficiency		Air Press	ure Drop		Number of	Height	Width	Depth		
			Clean Air	Mean Air	Dirty Air	User Spec	Filters					
Pre-Filter	Pleated	MERV 8	0.27 inWc	<b>0.63</b> inWc	1.00 inWc	N/A	1	24 in	24 in	2 in		
rie-riitei	rieateu	IVIERVO	U.Z7 INVVC	<b>0.03</b> INVVC	1.00 mvc	IN/A	1	20 in	24 in	2 in		
Filter	Varicel VXL	MEDV 1E	0.45 inWc	<b>1.22</b> inWc	2.00 inWc	N/A	1	24 in	24 in	12 in		
riitei	cartridge	IVIERV 13	0.43 INVC	1.ZZ INVVC	2.00 111000	IN/A	1	20 in	24 in	12 in		
				!	Special Option	S						
		Sound B	affle			Filter Gauge						
		(As casing	details)				Minih	nelic II 0-5"				

Access Section	Component: 4	Length: 22 in	Sh	Shipping Section: 1		
		Air Pressure Drop				
		0.00 inWc				
		Door				
Location	Width	Opening	Window Type	Light		
Drive side	14 in	Outward	Round	LED marine light kit and switch only		

Chilled Water	Coil	Component: 5		Length: 28 in Shipping Section: 1						
Coil Model	Total Capacity	Sensible Capacity	Number of Coils	Number of Rows	Fins per In	ch Tube	Diameter	Tube Spacing (Face x Row)		
5WL1208B	54152 Btu/hr	54152 Btu/hr	1	8	12	0.	.625 in	1.50 in x 1.299 in		
Air Volume		Air Temperature			Finned	Finned Face				
	Entering Dry Bulb Wet		Leaving Wet Bulb	Pressure Drop	Height	Length		Velocity		
3870 cm	99.6 °F 77.	,	73.7 ℃	0.56 inWc	42 in	35 in	10.21 f	ft² 379 ft/min		
Entering	Fluid Leaving	Flow Rat	te <b>F</b> ressur	re Drop	Velocity	Volun	ne	Weight		
( 85.9°F,	89.1 °F	35.10 gr	om 4.60	0 ftHd 1.80 ft/s		12.0	gal	103.00 lb		
Туре	Connection [I	Data Per Coil] Location	Material	Glycol Type	Min. Fin Sur Temp.		Tube Wall ace Temp.	Fouling Factor		
Threaded	2.50 in	Drive side	Carbon steel	Propylene (30%)	85.9°F	8	5.9°F	0.000		
Fin	Tube	Material Header	Ca	se			ide	Turbospiral		
Aluminum .0075	Copper .020	_			Drive s	side	Yes			
	( , , ,		AHRI 410 C	ertification						
			Coil is NOT cer	tified by AHRI						
			lo lo	or						
Loca	ation	Wic	ith	O	pening		Li	ight		
Drive	Drive side 8 in				Outward			LED marine light kit and switch only		
HRC coil sha minimum 0.0 per schedule	35" thick		RC coil meets . Include per Гур.							

Drive side

### **Technical Data Sheet**

LED marine light kit and switch

only

IFB Steam Coil	Col	mponent: 6		Length: 36 in Shipping Section: 2				
Coil Model	Total Capacity	Number of (	Coils Number	of Rows Fir	ns per Inch	Tube Diameter	Tube Spacing (Face x Row)	
IMX8AS45.927.02	240300 Btu/hr	1	2	2	8	0.625 in	1.50 in x 1.299 ir	
Air Volume	Air Temperat	ure	Coil Air Pressure	Finned Height	Finned Length	Face Area	Face Velocity	
	Entering	Leaving	Drop					
3870 cfm	Dry Bulb 17.6 °F	<b>Dry Bulb</b> 75.1 °F	0.17 inWc	43 in	27 in	8.05 ft²	488 ft/min	
3670 cm	17.0 F	Fluid	O. 17 INVVC	43 III				
Stear	n Pressure	Fluid	Condens	ate Load	iviax.	Superheat Temp. i	n Steam Coll Inlet	
	.00 psig			8 lb/hr		30.0 °1	F	
			Connection [	Data Per Coil]				
Туре	St	eam Size		sate Size	Location	Material		
Threaded		2.50 in	2.5	0 in	Drive side		Carbon steel	
			Mat	erial				
Fin	Tub			ader	Case			
0. Aluminum	Aluminum .0075 in Copper .035 in Carbon Steel				on Steel	Ga	ılv. steel	
Access Section	Col	mponent: 7		Length: 24 in		Shipping Sectio	n: 2	
			Air Press	ure Drop				
			0.00	inWc				
			Do	oor				
Location		Width		ning	Window Type		Light	
Drive side		16 in	Outv	ward	Round	LED m	arine light kit witl GFI outlet	
Future Chilled Wa	ter Coil Co	mponent: 8		Length: 28 in		Shipping Sectio	n: 2	
	Number of C	oils			Numb	er of Rows		
	1					2		
Coil Air Pressure Dr	op Fini	ned Height 42 in	Finned	in Width	Face Area 10.21 ft <sup>2</sup>		Face Velocity 379 ft/min	
U. TO INVVC	Connection Loc		30	) in		tion Material	3/9/t/min	
	Drive sid					on steel		
Coi	il Model		Drair	2 Pan	Drain Pan Side			
Future Coil	(Not Supplied)		Stainle	ss steel		Drive si	de	
			AHRI 410 C	ertification				
	_		Coil is NOT cer	rtified by AHRI				
			Do	oor				
Location		Wid	th	Op	ening		Light	

Humidifier Section. Humidifier manifold to be factory installed. Performance data is located at the end of this submittal.

Outward

14 in

BOBKVU UAMS CAMID 6 11/1/2024

provided/installed by others.

**UAMS CAMID** 

### Technical Data Sheet

doors on positiver pressure sections. Typ.

11/1/2024

		Апи-э з	stacked				rechnical Data Sheet							
Chilled Water	Coil		Component	:: 9			Length: 40	in			Shippir	ng Section	: 2	
Coil Model	Tota	I Capacity	Sensible Ca	pacity	Number	r of Coils	Number of	Rows	Fins per l	er Inch Tube D		Tube Diameter		Tube Spacing (Face x Row)
5WH1008C	3265	506 Btu/hr	198084 в	198084 Btu/hr		1	8	8		10		625 in	1.50 in x 1.299	
Air Volume			Air Temperat	ure		Coil Air			Finned	Fin	ned	Face A	rea	Face
		Entering		L	eaving		Pressure		Height	Len	gth			Velocity
	Dry Bull	b Wet	Bulb D	ry Bulb	W	et Bulb	Drop							
3870 cfm	99.6°I	77	2°F 5	52.8 °F	5.	2.6 °F	1.21 inW	'c	42 in	35	5 in 10.2°		ft²	379 ft/min
	Water		ı	low Rate	е	Pressu	re Drop	\	/elocity		Volume Weight		Weight	
Entering		Leaving												
45.0 °F		60.1 °F	4	3.30 gp	m	8.90	ftHd	3	3.30 ft/s		12.0 g	al		101.00 lb
		Connect	tion [Data Pe	r Coil]				Min. Fin Surface		e Min. Tube Wall		Wall	Fouling Factor	
Туре		Size		Location	1	Mat	erial		Temp.	S	urface Te	emp.		
Threaded		2.00 in	D	rive sid	de	Carbo	n steel	4	45.0 °F		45.0 °	F		0.000
			Mat	erial						Drair	n Pan		Dı	rain Side
Fin		Tu	be		Header	r	C	ase						
Aluminum .00	)75 in	Copper	.020 in		Coppe	er	Galv	. steel	S	Stainle	ss steel		Dr	ive side
					ŀ	AHRI 410 C	ertification							
ALIDI CERTIFIED  www.ahrielirectery.org  Air-Cooling and Air-Heading Code Air-Si Standard 410		vhich is bas	ed on AHR	I Stand	lard 410	) within	the Range	of Stai	O	ng Con	ditions	listed ir	n Tab	on Program le 1 of the



Standard. Certified units may be found in the AHRI Directory at www.ahridirectory.org

						D	oor							
Loca	tion		Width			Оре	ening		V	Vindow	w Type Light			ight
Drive	side		20 in			Out	ward			Round			LED marine light kit and	
TSP is no	early 1.5'	' less	than							switch only				ch only
schedule														
Return/Exha			Componer	t: 10	Length: 38 in Shipping Section: 3									
						Fan Perf	formance							
Air Volume	Air Volume Static Pressure						Total I Pow	•	Fan Sha Powe			Spe	ed	Outlet Velocity
	External	<b>J</b> Tota	l	Cabinet							Operatii	ng	Maximum	
3870 cfm	3.00 inWc	7.07 in	iWc 0	.00 inWc	1	.11	6.2	kW	6.95 BI	HP	3199 rp	om	3650 rpm	0 ft/min
						Fan	Data							
Fan Type	Blade Type Class	/ Nomi	nal Fan Size	Quantity	of Fans	Wheel I	Diameter	Mate	rial Type		mber of Blades		Discharge	Motor Location
Centrifugal - Plenum	Airfoil / 2	2 D	DPL16	1		15.	75 in Aluminur		minum	12		Axial		Behind Fan
						Moto	r Data							
Power	Electrical Supply	Spee	d E	fficiency	ncy Enclosure		Frame	Size	ize Supplier		Number Poles		Lock Rotor Current	Full Load Current
10.0 HP	460/60/3 V/Hz/Phase	3500 r	pm Pi	remium	nium ODP		213 T f	213 T frame Ger		ric	2		74.01 A	12.00 A
						Fan C	ptions							
	Piezomete	er Ring:	Provided	on Drive	Side F	an			Piezome	eter De	elta P: 6	.87		
	Shaft Groundi	ing Kit:	Provided						ls	olator	Type: S	pring	מ	
					VFD/S	Starter/D	)isconnec	t Data			-	' '	,	
	Selection	n Type:	External	I-Box						Ve	ndor: F	acto	ry Standard	
		,,	10 HP 🛕	J BON								460 v	i y otanidai d	
Н	eight x Width x		<b>∕</b> Λ	6.00 in x 4.	∩∩ in							Door	Side	
	•		NEMA 1	3.00 III X 4.	.00 111					ivioui	ining.	,001	Side	
	LIIO	iosui c.	INLIVIA			D	oor							
	Location						idth						Opening	
	Drive side	2				22 in Outward								
	Please c		VFDs	are				mm	ond in	W0"	d one			
	provided	_			re		Reco	111111	ena in	war	u ope	mm	g acces	-

		A110 3 3tt	icited				recinica	. Data c	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
Plenum Se	ection	С	omponent: 11		Leng	th: 24 in		Shippii	ng Section:	3	
				Þ	Air Pressure Dr	ор					
					0.05 inWc						
				(	Custom Dampe	ers					
Custom Dam	nper Damp	er Type	Location	Siz	e (Width x Hei	ght)	Material	Blad	le Action	Rainh	ood w/Screen
				Overa		Opening					
1	CBD	6-OUT	End	32 in x 1	16 in 29	in x 13 in	Alum	Pa	arallel		None
					Door						
Lo	cation		Window Type	)		Light					
Driv	ve side		20 in		Outward		Round		LED ma	rine liç	ght kit and
									SI	witch (	only
Plenum Se	ection	С	omponent: 12			th: 24 in		Shippii	ng Section:	4	
				P	Air Pressure Dr	ор					
					0.12 inWc						
				C	Custom Openin	gs					
Custor	n Opening		Location		Width		Height		Rain		/Screen
	1		End		20 in		20 in			Non	е
					Door						
	Locatio				Width				Opening		
	Drive s	ide			20 in				Outward		
Α								01.1	2 11		
Access Sec	ction	C	omponent: 13			th: 24 in		Shippii	ng Section:	4	
				P	Air Pressure Dr	op					
					0.00 inWc						
					Door						
	Locatio				Width				Opening		
	Drive s	ide			20 in				Outward		
Combinati	ion Filter	С	omponent: 14		Leng	th: 16 in		Shippir	ng Section:	4	
Combinati	Access		•	Velocity	9	Face A	Aroa	3		olume	
	Front			B ft/min		6.9				0 cfm	
Portion		Efficiency	330		sure Drop	0.7	Number of	Uoiaht	Wid		Donth
POLITOIT	Туре	Efficiency	Clean Air		Dirty Air	User Spec	Filters	Height	VVIC	un	Depth
							1	24 in	24	in	2 in
Pre-Filter	Pleated	MERV 8	0.27 inWc	<b>0.63</b> inWc	1.00 inWc	N/A	1	20 in	24		2 in
	Varicel VXL						1	24 in	24		12 in
Filter	cartridge	MERV 15	0.45 inWc	<b>1.22</b> inWc	2.00 inWc	N/A	1	20 in	24		12 in
	our triago				Special Option	ıc	·	20111	21		12 111
		Sound Ba	fflo		Special Option	13	Filto	r Gauge			
		(As casing d						helic 0-5	5"		
		(7 to odomig d	otalisj				Wagire				
Access Sec	ction	С	omponent: 15		Leng	th: 22 in		Shippii	ng Section:	4	
				P	Air Pressure Dr	ор					
					0.00 inWc						
					Door						
Lo	cation		Width		Opening	Window Type				Light	i
	Drive side				Outward				LED marine light kit and		
			14 in				switch only				
							Switten			,	

	А	HU-5 St	tacked			Technical Data Sheet							
Chilled Water	Coil		Component: 16			Length: 28 in			Shipping Section	n: 4			
Coil Model	Total Cap	oacity	Sensible Capacity	Number	r of Coils	Number of Rov	ws Fi	ns per Inch	Tube Diameter		Tube Spacing (Face x Row)		
5WL1208B	54152 E	Btu/hr	54152 Btu/hr		1	8		12	0.625 in	1.	50 in x 1.299 in		
Air Volume			ir Temperature			Coil Air	Finne		nned Face F	rea	Face		
	Ente Dry Bulb	ering Wet B		Leaving	Wet Bulb Pressure		Heigh	nt Lei	ngth		Velocity		
3870 cfm	99.6°F	77.2			3.7 °F	0.56 inWc	42 ii	n 3!	5 in 10.2	l ft²	379 ft/min		
0070 0	Fluid	,,,_	Flow Ra			re Drop	Velocit		Volume		Weight		
Entering		eaving						,			<b>-</b>		
85.9°F	8	9.1°F	35.10 g	pm	4.60	) ftHd	1.80 ft	/s	12.0 gal		103.00 lb		
			ata Per Coil]			Glycol Type	Min	. Fin Surface	Min. Tube Wal		Fouling Factor		
Туре	Size	:	Location	Mat	erial	Dunandana		Temp.	Surface Temp.				
Threaded	2.50	in	Drive side	side Carbon s		Propylene (30%)		85.9 °F	85.9 °F		0.000		
			Material				Drain Pa	an	Drain Side		Turbospiral		
Fin Aluminum .007		<b>Tube</b> er .020 i	Heade			stool	tainless	stool	Drive side		Yes		
Aluminum .007	om copp	lei .020 i	in Coppe			Sertification	lairiiess i	steer	Di ive side		162		
						rtified by AHR	1						
				COILIS		oor	.1						
Loc	cation		Wie	dth	Ы		Opening			Light			
	e side		8			Outward LED marine light kit and swi					kit and switch		
Manual Comp	onent		Component: 17			Length: 36 in			Shipping Section	า: 5			
						re Drop inWc							
						nel							
	Location					dth			Opening	1			
Re	movable pa	anels				in			Outwar				
Access Section	า		Component: 18			Length: 24 in			Shipping Section	ո։ 5			
						ure Drop							
					0.00	111110							

IFB Coil Section.

Width

16 in

Location

Drive side

IFB coil in this section will be identical to the IFB coil in the bottom section of the air handler (component 6)

Door

Opening

Outward

Window Type

Round

Light

LED marine light kit with

GFI outlet

B0BKVU UAMS CAMID 9 11/1/2024

Future Chilled Water Coil	Component: 19	Length: 28 in		Shipping Section: 5				
N	umber of Coils		Number of Rows					
	1		2					
Coil Air Pressure Drop	Finned Height	Finned Width	Width Face Area Face Velocity					
0.10 inWc	42 in	35 in	10.21 ft <sup>2</sup> 379 ft/min					
Con	nection Location		Connection Material					
	Drive side	<b>\</b> /	Carbon steel					
Coil Model		Drain Pan		Drain Pan Side				
Future Coil (Not Su	pplied)	Stainless steel	Drive side					
		AHRI 410 Certification						
		Coil is NOT certified by AHF	रा					
		Door						
Location	Width		Opening	Light				
Drive side	14 in	(	Outward	LED marine light kit and switch only				

er Inch	Tule Diam			
	Tube Diam	neter	Tube Spacing (Face x Row)	
0	0.625	in 1.	50 in x 1.299 in	
Finn	ned Fa	ace Area	Face	
Leng	ngth		Velocity	
35	5 in 1	0.21 ft²	21 ft <sup>2</sup> 379 ft/min	
	Volume		Weight	
/s 12.0 ga		101.00 lb		
rface Min. Tube Wal		Fouling Factor		
Surface Te		Temp.		
	45.0 °F		0.000	
Drain Pan		C	Orain Side	
Stainles	ss steel	D	rive side	
	Fin Ler 35	Finned Length  35 in 1  Volume  12.0 gal  Min. Tube Wal Surface Temp.  45.0 °F	Finned Length  35 in 10.21 ft²  Volume  12.0 gal  Min. Tube Wall Surface Temp. 45.0 °F  Drain Pan D	

#### **AHRI 410 Certification**



Certified in accordance with the AHRI Forced-Circulation Air-Cooling and Air-Heating Coils Certification Program which is based on AHRI Standard 410 within the Range of Standard Rating Conditions listed in Table 1 of the Standard. Certified units may be found in the AHRI Directory at www.ahridirectory.org

		Door		
Location	Width	Opening	Window Type	Light
Drive side	20 in	Outward	Round	LED marine light kit and switch only

Humidifier Section. Humidifier manifold to be factory installed. Performance data is located at the end of this submittal.

BOBKVU UAMS CAMID 10 11/1/2024

Supply Fan			Compor	nent:	: 21			Length: 38 in Shipping Section: 6							
11.7							Fan Perf	ormance							
Air Volume		Static P	ressure				Fan Energy Total I Index(FEI) Pow		-	Fan Sha Powe		Speed		Outlet Velocity	
	External	To	tal	С	abinet						O	erating	Maximum		
3870 cfm	3.00 inWc	6.90	inWc	0.0	00 inWc	1	.11	6.11	(W	6.79 BI	HP 31	74 rpm	3650 rpm	0 ft/min	
							Fan	Data							
Fan Type	Blade Type / Class	/ Non	minal Fan S	Size	Quantity of	of Fans	Wheel [	Diameter	r Material Type		Numbe Blade		Discharge	Motor Location	
Centrifugal - Plenum	Airfoil / 2		DDPL16		1		15.	75 in	Alur	minum	12		Axial	Behind Fan	
							Moto	r Data							
Power	Electrical Supply	Spe	eed	Eff	ficiency	Encl	osure	Frame	Size			mber of Poles	Lock Rotor Current	Full Load Current	
10.0 HP	460/60/3 V/Hz/Phase	3500	O rpm	Pre	emium	0	DP	213 T f	rame	Generic		2	74.01 A	12.00 A	
							Fan O	ptions							
	Piezometer	Ring:	Provid	led (	on Drive	Side F	an			Piezome	eter Delta I	<b>P</b> : 6.8	37		
	Shaft Groundin	ng Kit:	Provid	led	t					Is	olator Type	e: Spr	ring		
						VFD/S	Starter/D	isconnect	Data						
	Selection	Type:	Extern	ıal J	-Вох			Ven			Vendo	r: Fac	ctory Standard		
	VFD P	ower:	10 HP								Voltage	e: 460	460 V		
He	eight x Width x D	Depth:	6.00 in	х 6	.00 in x 4	.00 in		Mounting:			j: Do	Door Side			
Enclosure: NEMA 1															
							Do	oor							
Location							Wi	idth				Opening			
Drive side				22 in				2 in Outward							
			0					1 41-							

Plenum Section	1	Component: 22		Length: 24 in		Shippi	ng Section: 6		
			0.05	inWc					
			Custom	Dampers					
<b>Custom Damper</b>	Damper Typ	e Location	Size (Widt	h x Height)	Material	Blac	le Action	Rainhood w/Screen	
			Overall	Opening					
1	CBD6-OU	T End	32 in x 16 in	29 in x 13 in	Alum	Pa	arallel	None	
			Do	oor					
Location	Location \		Оре	ening	Window Type		Light		
Drive side		20 in	Out	ward	Round	Round		LED marine light kit and switch only	

Unit Sound Power (dB)												
Туре	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz				
Radiated:	84	75	66	74	68	62	51	51				
Unit Discharge:	84	77	75	82	81	81	80	71				
Unit Return:	84	75	66	74	68	62	51	51				

BOBKVU	UAMS CAMID	11	11/1/2024
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Shippi	ng Se	ectio	on I	Deta	ails												
Section	on			ngth			ight						eights (lb)			enter of Gravity	•
				in			lb		P1		P2		P3	P4	XX	YY	ZZ
1			1	14		14	41		282		25	6	439	465	71	23	30
2			1	28		18	43		472		44	8	451	474	64	23	28
3			6	52		7	71		232		22	8	154	157	25	24	27
4			1	14		12	49		234		20	8	391	417	74	23	33
5			1	28		12	255		253		22	9	376	399	79	23	32
6			6	52		6	77		208		205		130	134	24	24	30
<b>Entire</b>	Unit		3	04		72	36		n/a	n/a		а	n/a	n/a	n/a	n/a	n/a
				level	only												
	24		114 16	22	28	36	24	128 28	40	38	24		YY ( <del>)</del>				<del></del>
	4 P	Ą	D	Þ		5 3	Þ			6	P		↑ ¥ P2				Р3
52	PLENUM	ACCESS	PBFILT	ACCESS	CWC	MANUAL	ACCESS	CWC	CWC	FAN	PLENUM	52			Air Flow	<b>→</b>	
	D.												P1				P4
	PLENUM	ACCESS	PBFILT	ACCESS	CWC	IFB STC	ACCESS	CWC	CWC	FAN	PLENUM	(,,	Q		Plan View		
52	M	ESS	II.	ESS	ি ক	STC	ESS	ি ন	VC.	ź	M	52	L	→ xx	Plan View		
z <sub>.</sub> x	24	24	16	22	28	36	24	28	40	38	24						
	2.1		114	LL	20	30		128	70	62		-					

NOTE: Special components aren't included in the corner weights and center of gravity data.

NOTE: Shipping weights listed do not include weight of water (listed in coil section(s) above.

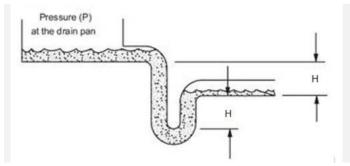
# Shipping Protection

None

Supply Static Pressure Drop		
Component	Option	Static Pressure Drop
Plenum Section	Plenum Section	0.12 insWg
Access Section	Access Section	
Panel and Cartridge Filter	Panel and Cartridge Filter	1.86 insWg
Access Section	Access Section	
Chilled Water coil	Chilled Water coil	0.56 insWg
Manual Section	Manual Section	
Access Section	Access Section	
Chilled Water coil	Chilled Water coil	0.10 insWg
Chilled Water coil	Chilled Water coil	1.21 insWg
Supply Fan	Cabinet	
Plenum Section	Plenum Section	0.05 insWg
External Static	External Static	3.00 insWg
Total Suppl	y Fan Static	6.90 insWg

Exhaust Static Pressure Drop			
Component	Option	Static Pressure Drop	
Plenum Section	Plenum Section	0.12 insWg	
Access Section	Access Section		
Panel and Cartridge Filter	Panel and Cartridge Filter	1.86 insWg	
Access Section	Access Section		
Chilled Water coil	Chilled Water coil	0.56 insWg	
Steam Face and Bypass Coil	Steam Face and Bypass Coil	0.17 insWg	
Access Section	Access Section		
Chilled Water coil	Chilled Water coil	0.10 insWg	
Chilled Water coil	Chilled Water coil	1.21 insWg	
Return Fan	Cabinet		
Plenum Section	Plenum Section	0.05 insWg	
External Static	External Static	3.00 insWg	
		7.07 insWg	
Total Return/Ex	Total Return/Exhaust Fan Static		

Minimum Recommended Drain Pan Trap Dimensions						
Shipping Section	Component	Н				
1	Chilled Water coil	11.08				
2	Chilled Water coil	11.62				
2	Chilled Water coil	14.04				
4	Chilled Water coil	5.08				
5	Chilled Water coil	5.28				
5	Chilled Water coil	7.70				



Dimensions provided as a courtesy and are recommended minimums only. Daikin is not responsible for supplying or designing drain pan traps and is not responsible for any damage caused by incorrect trap heights. The dimensions listed above should be reviewed and approved by a licensed plumbing professional.

### **AHRI Certification**



Certified by the AHRI Central Station Air-Handling Unit (AHU) Certification Program, which is based on AHRI Standard 430/431. AHRI certified units are subject to rigorous and continuous testing, have performance ratings independently measured and are third-party verified. Certified units may be found in the AHRI Directory at www.ahridirectory.org.

BOBKVU UAMS CAMID 13 11/1/2024

### Notes

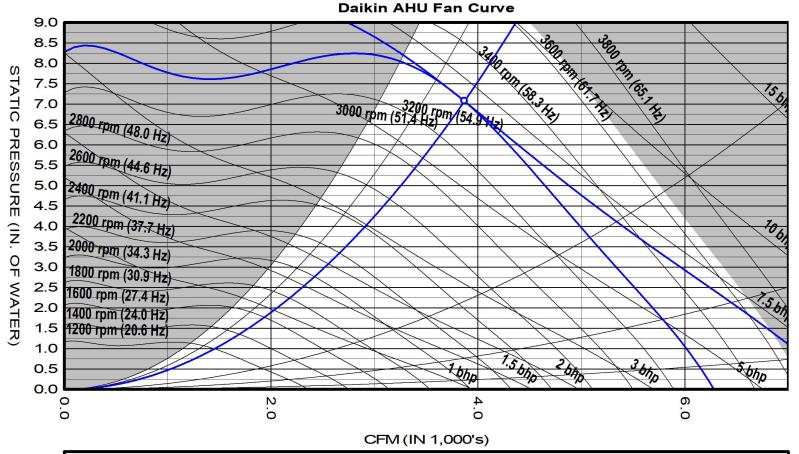
### Important

- 1. This unit may not meet ASHRAE Standard 90.1 2007 fan motor power limitations for the year and system selected. If that code applies, alternate fan selections may be required.
- 2. The designer and installer must ensure compliance with applicable codes. A component supplier cannot determine the brake horsepower ("BHP") for other motors in the air handling system.
- 3. Before approving this unit, determine whether ASHRAE Standard 90.1 2007 has been adopted in the specific jurisdiction or contract specifications in which the unit will be installed.

BOBKVU	UAMS CAMID	14	11/1/2024

11/1/2024

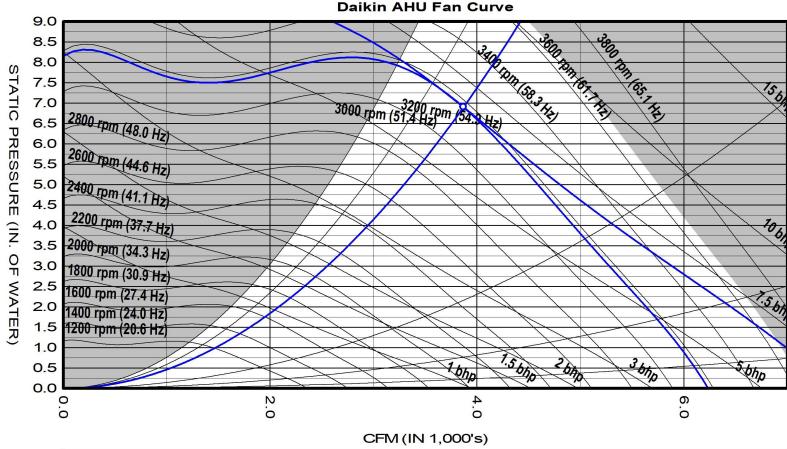
AHU-5 Stacked



AF 16 DD PLENUM 12BL (100% Width) 1x1 Ret/Exh Fan at Standard Conditions						
Air volume	3870	cfm	Fan speed		3199	rpm
Total static	7.07	insVVg	Max speed		3650	rpm
Fan Shaft Power	7.0	bhp	Efficiency		61.9	%
Approx VFD Setting	54.8	Hz	Motor Speed		3500	rpm
Fan Energy Index(FEI)	1.11					
Unit tagging	AHU-5 Stad	cked		Date	Novemb	er-01-2024
Job name	UAMS CAM			Time	07:13	

11/1/2024

AHU-5 Stacked

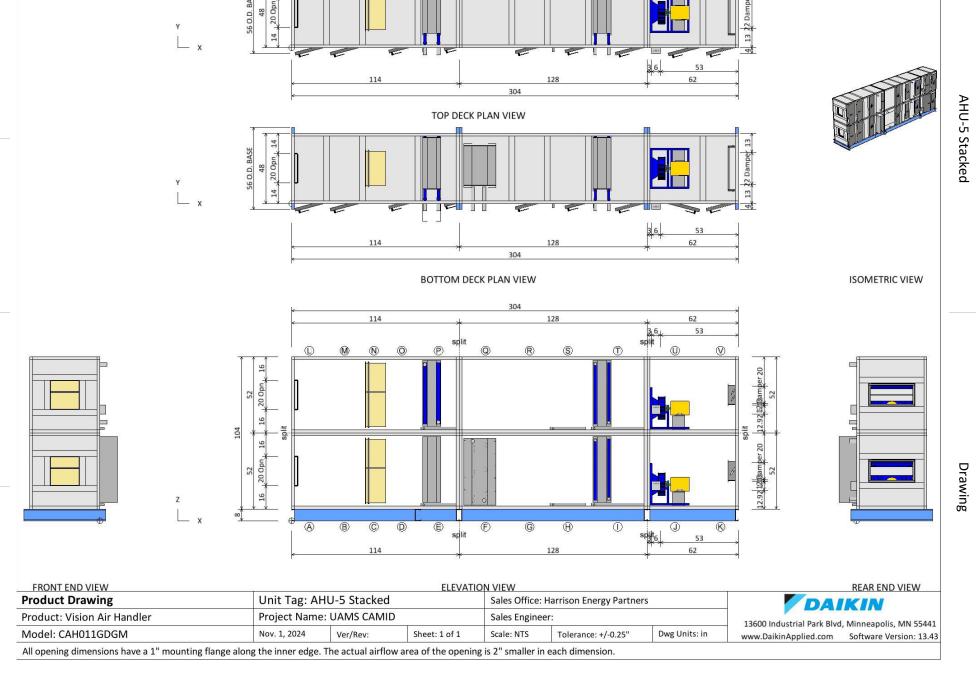


AF 16 DD PLENUM 12BL (100% Width) 1x1 Supply Fan at Standard Conditions						
Air volume	3870	cfm	Fan speed		3174	rpm
Total static	6.90	insVVg	Max speed		3650	rpm
Fan Shaft Power	6.8	bhp	Efficiency		61.8	%
Approx VFD Setting	54.4	Hz	Motor Speed		3500	rpm
Fan Energy Index(FEI)	1.11					
Unit tagging	AHU-5 Stad	cked		Date	Novemb	er-01-2024
Job name	UAMS CAM			Time	07:13	

Supply fan performance is certified in accordance with the Central Station

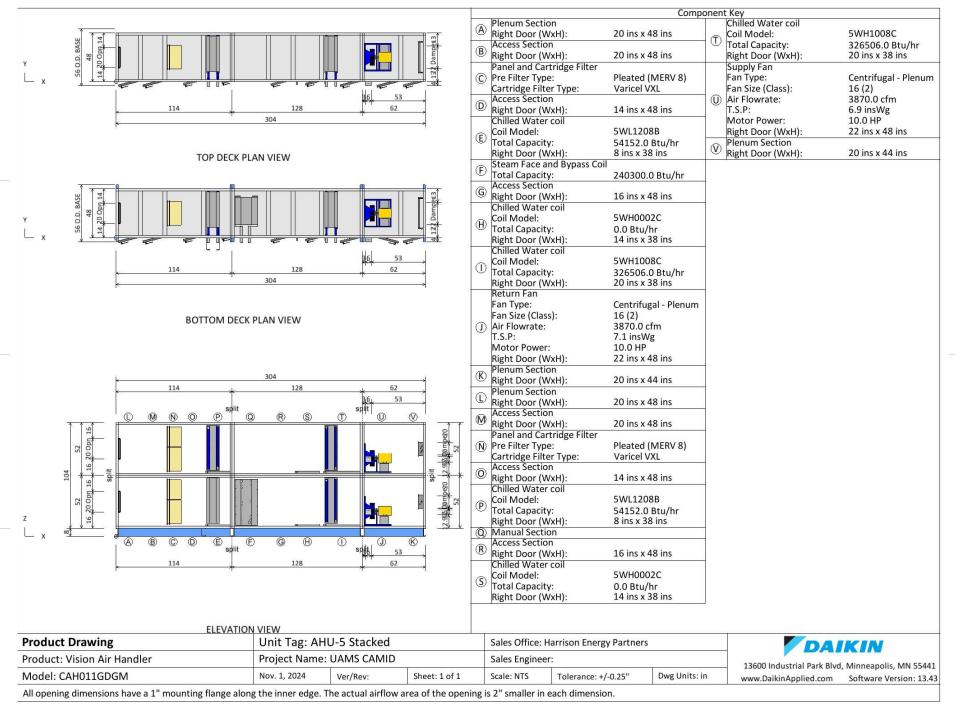
Air-Handling Unit Certification Program, which is based on AHRI Standard 430.



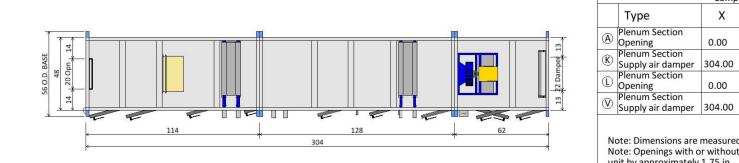




**BOBKVU** 



11/1/2024



Note: Dimensions are measured from the origin point. Note: Openings with or without dampers are recessed into the unit by approximately 1.75 in.

0.00

304.00

0.00

Component Key

14.00

9.50

14.00

9.50

Type

Plenum Section Opening

Plenum Section

Plenum Section

Supply air damper Plenum Section Opening

Z

24.00 20.00

27.50 29.00

76.00 20.00

79.50 29.00

Wid

Hgt

20.00

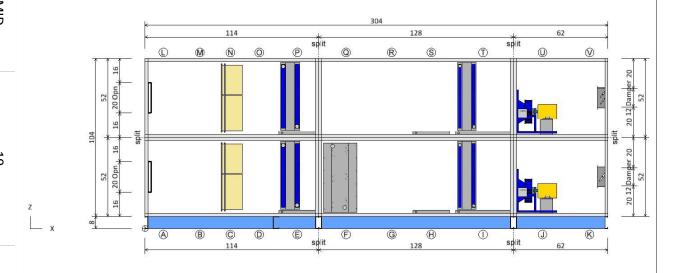
13.00

20.00

13.00

AHU-5 Stacked

#### PLAN VIEW



ELE	VATIO	ON VI	IEW

Product: Vision Air Handler Project Name: UAMS CAMID Sales Engineer:  Model: CAH011GDGM Nov. 1, 2024 Ver/Rev: Sheet: 1 of 1 Scale: NTS Tolerance: +/-0.25" Dwg Units:	<b>Opening/Damper Connections</b>	Unit Tag: AHU-5 Stacked		Sales Office: Harrison Energy Partners			
Model: CAH011GDGM Nov. 1, 2024 Ver/Rev: Sheet: 1 of 1 Scale: NTS Tolerance: +/-0.25" Dwg Units:	Product: Vision Air Handler	Project Name: UAMS CAMID		Sales Engineer:			
	Model: CAH011GDGM	Nov. 1, 2024	Ver/Rev:	Sheet: 1 of 1	Scale: NTS	Tolerance: +/-0.25"	Dwg Units: in

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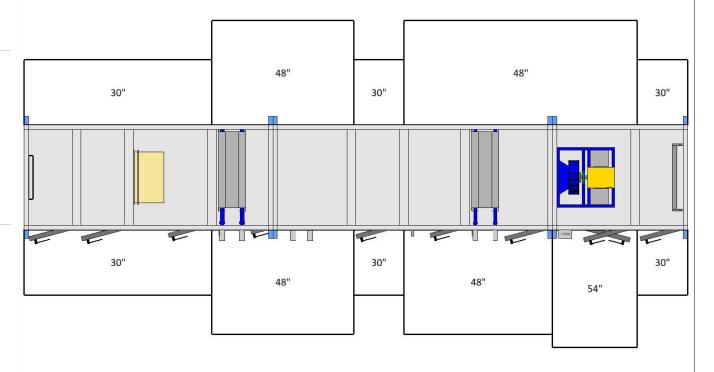
Drawing

Notes

Check local electrical component service clearance codes

Access is only required on one side of the unit.

for specific distances.



PLAN VIEW

Service Clearance View	Unit Tag: AF	Unit Tag: AHU-5 Stacked		Sales Office:	Sales Office: Harrison Energy Partners			
Product: Vision Air Handler	Project Name	Project Name: UAMS CAMID		Sales Engineer:				
Model: CAH011GDGM	Nov. 1, 2024	Ver/Rev:	Sheet: 1 of 1	Scale: NTS	Tolerance: +/-0.25"	Dwg Units: in		

DAIKIN

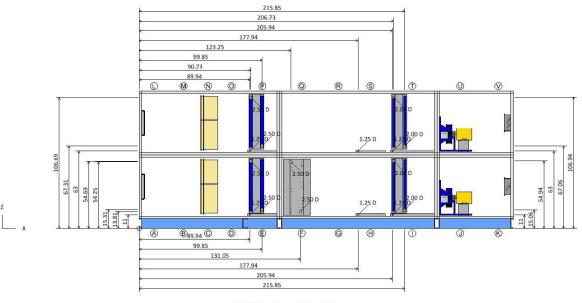
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AHU-5 Stacked

	Type	Х	Υ	Z	Diam
	Chilled Water coil				
	Condensate drain conn:	89.94	-2.90	11.00	1.25
(E)	Cold water inlet:	99.85	-5.00	15.31	2.50
	Cold water outlet:	90.73	-5.00	54.69	2.50
	Steam Face and Bypass Coil				
(F)	Steam inlet:	123.25	-5.00	54.25	2.50
~	Steam outlet:	131.05	-5.00	13.81	2.50
_	Chilled Water coil				
$\oplus$	Condensate drain conn:	177.94	-2.90	11.00	1.25
	Chilled Water coil				
	Condensate drain conn:	205.94	-2.90	11.00	1.25
1	Cold water inlet:	215.85	-5.00	15.06	2.00
	Cold water outlet:	206.73	-5.00	54.94	2.00
	Chilled Water coil				
	Condensate drain conn:	89.94	-2.90	63.00	1.25
P	Cold water inlet:	99.85	-5.00	67.31	2.50
	Cold water outlet:	90.73	-5.00	106.69	2.50
	Chilled Water coil				
<b>S</b>	Condensate drain conn:	177.94	-2.90	63.00	1.25
	Chilled Water coil				
	Condensate drain conn:	205.94	-2.90	63.00	1.25
1	Cold water inlet:	215.85	-5.00	67.06	2.00
	Cold water outlet:	206.73	-5.00	106.94	2.00

Note: Dimensions are measured from the origin point.

### LEFT ELEVATION VIEW



RIGHT ELEVATION VIEW

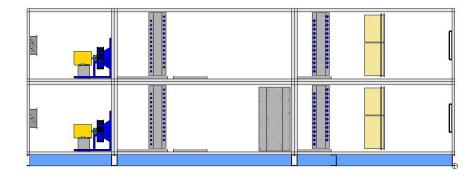
Product: Vision Air Handler Pro	oiect Name	LIAMS CAMID		Calas Francisco	90.0	
	Project Name: UAMS CAMID		Sales Engineer:			
Model: CAH011GDGM Nov	ov. 1, 2024	Ver/Rev:	Sheet: 1 of 1	Scale: NTS	Tolerance: +/-0.25"	Dwg Units: in

DAIKIN

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11/1/2024

Model: CAH011GDGM



	Туре	Х	Υ	Z	Volts	Phase
(D)	Access Section LED Marine Light	82.00	0.00	34.00	110	1
(E)	Chilled Water coil LED Marine Light	108.00	0.00	54.00	110	1
G	Access Section LED Marine Light GFI	170.00	0.00	34.00	110	1
(H)	Chilled Water coil LED Marine Light	193.00	0.00	54.00	110	1
(I)	Chilled Water coil LED Marine Light	230.00	0.00	54.00	110	1
(1)	Return Fan Fan	248.00	0.00	23.92	460	3
(K)	Plenum Section LED Marine Light	292.00	0.00	56.00	110	1
0	Access Section LED Marine Light	82.00	0.00	86.00	110	1
(P)	Chilled Water coil LED Marine Light	108.00	0.00	106.00	110	1
(R)	Access Section LED Marine Light GFI	170.00	0.00	86.00	110	1
(S)	Chilled Water coil LED Marine Light	193.00	0.00	106.00	110	1
(1)	Chilled Water coil LED Marine Light	230.00	0.00	106.00	110	1
0	Supply Fan Fan	248.00	0.00	75.92	460	3
	Plenum Section LED Marine Light	292.00	0.00	108.00	110	1

Component Key

230 193 170 108 82 M N 0 (\$) 0 0 Θ © 0 (A) ®<sub>82</sub> € (E) (G)  $\oplus$ 1 (1)

**LEFT ELEVATION VIEW** 

Note: Dimensions are measured from the origin point.

RIGHT ELEVATION VIEW						
<b>Electrical Connections</b>	Unit Tag: AHU-5 Stacked	Sales Office: Harrison Energy Partners				
Product: Vision Air Handler	Project Name: UAMS CAMID	Sales Engineer:				

 JAMS CAMID
 Sales Engineer:

 Ver/Rev:
 Sheet: 1 of 1
 Scale: NTS
 Tolerance: +/-0.25"
 Dwg Units: in

13600 Industrial Park Blvd, Minneapolis, MN 55441 www.DaikinApplied.com Software Version: 13.43

DAIKIN

All opening dimensions have a 1" mounting flange along the inner edge. The actual airflow area of the opening is 2" smaller in each dimension.

Nov. 1, 2024

		S	hippin	g Sect	ions
Section	Weight	lb)X	Υ	Z	
Section 1		114	48	52	-
Section 2		128	48	52	
Section 3		62	48	52	
Section 4		114	48	52	
Section 5		128	48	52	
Section 6		62	48	52	
Total Unit	7236.60	304	48	104	

Note: Base rails, curb ready base, coil connectors, drain connectors, and control boxes not included in height X, Y, Z dimensions.

Shipping section may be 2" longer in air flow direction due to internal splice joint.

	1		114			Ē.		128		62	!	ř
	24	24	16	22	28	36	24	28	40	38	24	
52	PLENUM	ACCESS	PBFILT	ACCESS	CWC	MANUAL	ACCESS	CWC	CWC	6 FAN	PLENUM	52
52	1 PLENUM	ACCESS	PBFILT	ACCESS	CWC	IFB STC	ACCESS	CWC	CWC	3 FAN	PLENUM	52
_х	24	24	16 114	22	28	36	24	28	40	38 62	24	

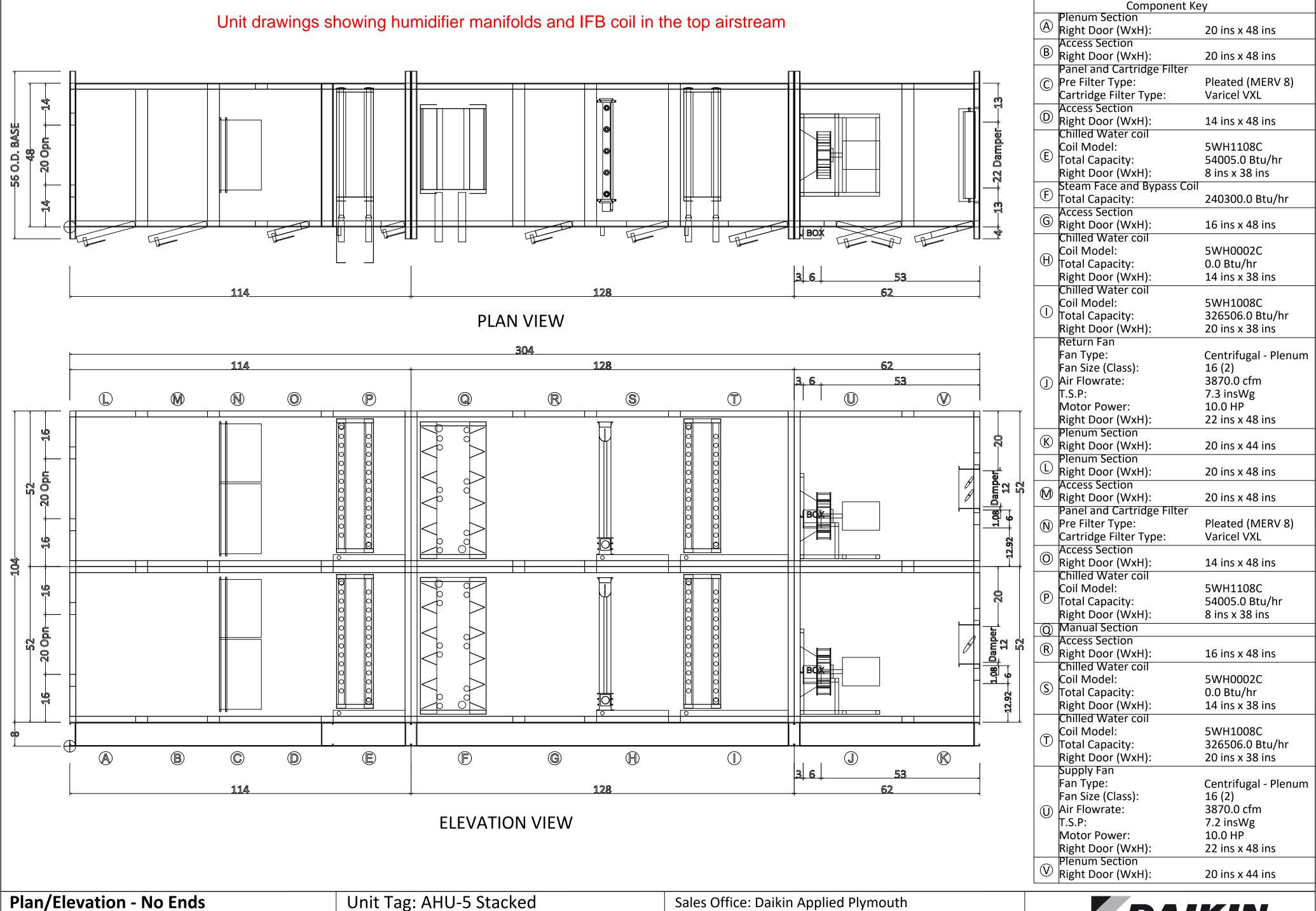
Shipping Sections	Unit Tag: AHI	J-5 Stacked		Sales Office: H		
Product: Vision Air Handler	Project Name:	UAMS CAMID		Sales Engineer:		
Model: CAH011GDGM	Nov. 1, 2024	Ver/Rev:	Sheet: 1 of 1	Scale: NTS	Tolerance: +/-0.25"	Dwg Units: in

DAIKIN

13600 Industrial Park Blvd, Minneapolis, MN 55441 www.DaikinApplied.com Software Version: 13.43

11/1/2024

Product Drawing	Unit Tag: AH	U-5 Stacked		Sales Office:	Harrison Energy Partner	's	DAIKIN	
Product: Vision Air Handler	Project Name:	UAMS CAMID		Sales Enginee	er:		13600 Industrial Park Blvd, Minneapolis, MN 55441	
Model: CAH011GDGM	Nov. 1, 2024	Nov. 1, 2024 Ver/Rev: Sheet: 1 of 1			Tolerance: +/-0.25"	Dwg Units: in	www.DaikinApplied.com Software Version: 13.43	
All and the discount of the last and the second sec	VI 2 1 5		C.1 .		T 150 3			



Plan/Elevation - No Ends	Unit Tag: AH	U-5 Stacked		Sales Office: Daikin Applied Plymouth			
Product: Vision Air Handler	Project Name:	: UAMS CAMID		Sales Engineer:			
Model: CAH011GDGM	Oct. 24, 2024	Ver/Rev: A	Sheet: 1 of 1	Scale: NTS	Tolerance: +/-0.25"	Dwg Units: in	



13600 Industrial Park Blvd, Minneapolis, MN 55441 www.DaikinApplied.com Software Version: 13.43



# Submittal Package



Opportunity Name, Quote Name UAMS CAMID, 896314

Preparation Date 2024-07-23

Locally Represented By Condair House Account Sales 2740 Fenton Road Ottawa, Ontario, Canada

Salesperson Liam Berry



# **Zone List**

Zone Tag	Q <sub>MA</sub> CFM	Q <sub>OA</sub> %	DB <sub>OA</sub> °F	RH <sub>OA</sub> %	DB <sub>BH</sub> °F	RH <sub>BH</sub> %	DB <sub>AH</sub> °F	RH <sub>AH</sub> %	DB <sub>SD</sub> °F	RH <sub>SD</sub> %	<b>W</b> <sub>Duct</sub> in.	H <sub>Duct</sub> in.	H <sub>TOT</sub> lbs/hr	Absorption ft	Location	Tech
H-2	26000	100	53	13	53	13	53	83	53	80	108	72	718	1.62	In Duct	LiveSteam
H-5	2500	100	52	13	55	11	55	85	55	80	30	36	77	1.97	In Duct	LiveSteam

 $Q_{MA}$  = Mixed Air Volume  $Q_{OA}$  = Outside Air

DB<sub>OA</sub> = Outside Air Design Dry Bulb Temperature RH<sub>OA</sub> = Outside Air Design Relative Humidity

 $DB_{BH}$  = Before Humidification Dry Bulb Temperature  $RH_{BH}$  = Before Humidification Relative Humidity

DB<sub>AH</sub> = After Humidification Dry Bulb Temperature RH<sub>AH</sub> = After Humidification Relative Humidity

 $DB_{SD}$  = Space Design Dry Bulb Temperature  $RH_{SD}$  = Space Design Relative Humidity

 $W_{Duct} = Duct Width$   $H_{Duct} = Duct Height$ 

H<sub>TOT</sub> = Total Humidification Absorption = Absorption Distance



# **Product List**

Zone Tag	Part Number		Item	Qty
H-2	1594341		Valve, Bronze, 1 1/4" Cv=20.0	1
H-2	2597632		Act. 0-10 Vdc 1/2 - 2 in (1/2 - 3/4 SS)	1
H-2	2597652		Wye Strainer, 2.0" nominal diameter	1
H-2	2577157		Trap F&T up to 15 psig, M	1
H-2	2549922		HEADER SAM-E 108, 3" CENTERS (SST)	1
H-2	2538925		Header Insulation, SAM-e 108"	1
H-2	1503419		Steam Tube, SAM-e, 60 in Type B, 304SS	33
H-2	2538853		Tube Insulation, SAM-e 60" (Covers 1 Tube)	33
H-2	2521405		Mounting Frame, SAM-e 51 - 99 in, SS	1
H-2	1503476		Inlet adapter, SAM-e, Pressure Steam 1-1/4" npt	1
H-2	2591657		SP Top Center Mounting Assembly	3
H-2	2591658		SP SAM-e Adjustable voke Side Frame qtv2	1
H-2	2577157		Trap F&T up to 15 psig, M	$Y \mid 1Y$
H-5	1594314	>	Valve, Bronze, 1/2" Cv=2.20	1
H-5	2597632		Act. 0-10 Vdc 1/2 - 2 in (1/2 - 3/4 SS)	1 1
H-5	2597648		Wye Strainer, 0.75" nominal diameter	1 1
H-5	2577157		Trap F&T up to 15 psig, M	1
H-5	2549909	<b>&gt;</b>	HEADER SAM-E 30, 3" CENTERS (SST)	1 1
H-5	2538912		Header Insulation, SAM-e 30"	1 🕌
H-5	1503391		Steam Tube, SAM-e, 24 in Type A, 304SS	7
H-5	2538847	<u> </u>	Tube Insulation, SAM-e 24" (Covers 1 Tube)	7
H-5	2521404		Mounting Frame, SAM-e 27 - 51 in, SS	1
H-5	1503473		Inlet adapter, SAM-e, Pressure Steam1/2" npt	1
H-5	2591657		SP Top Center Mounting Assembly	1
H-5	2591658	<b>&gt;</b>	SP SAM-e Adjustable yoke, Side Frame qty2	1
H-5	2577157		Trap F&T up to 15 psig, M	1

Product list appears to list devices for AH-5 as 1 unit. AH-5 is 2 independent identical units. Update product list accordingly.



### Data Sheet - H-2



Opportunity Name: UAMS CAMID

Quote Name: 896314 Salesperson: Liam Berry

Date: 2024-07-23



### **Calculation Basis**

Humidification Load (total)	718.0 lbs/h
Load Correction (gains/losses)	30.7 lbs/h
Calculated Load	687.3 lbs/h
Duct Size	108 x 72 in.
Duct Orientation	Horizontal
Total Air Volume	26000 CFM
Outside Air	100 %
Air Velocity	481.5 ft./min
Altitude	0 ft
Air Pressure	14.7 psig
Humidity Increase	40.3 gr/lb

Outside Air	Temperature Relative Humidity Absolute Humidity	53.0°F 13 % 7.4 gr/lb
Before Humidification	Temperature Relative Humidity Absolute Humidity	53.0°F 13 % 7.4 gr/lb
After Humidification	Temperature Relative Humidity Absolute Humidity	53.0°F 83 % 49.5 gr/lb
Space Design	Temperature Relative Humidity Absolute Humidity	53.0°F 80 % 47.7 gr/lb

UPDATE TO 300'

### **Product Data**

### Valve, Bronze, 1 1/4" Cv=20.0

Supplied Steam Pressure:	12 psig
Adjusted Maximum Capacity:	719.3 lbs/h
Steam Outlet OD:	1.25 in.
Quantity Steam Outlets:	1
Minimum Steam Pressure:	2 psig

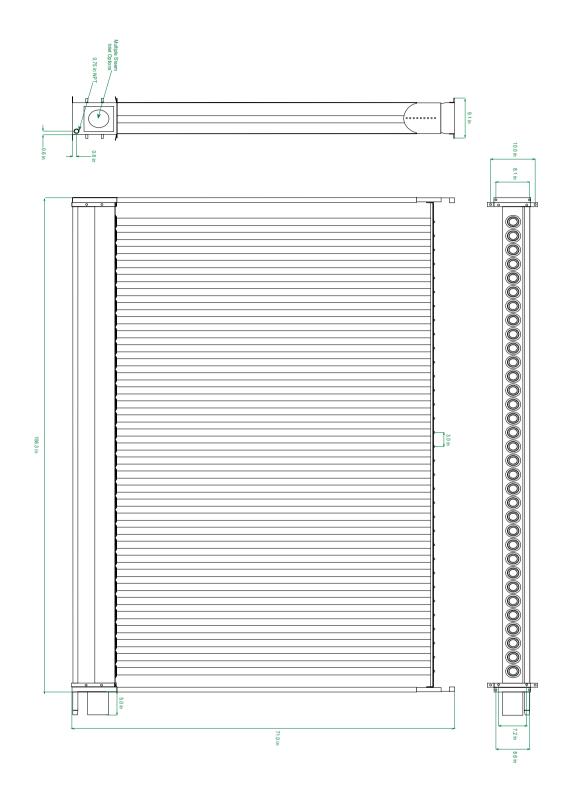
Maximum Steam Pressure:	50 psig
Width:	17.3 in.
Height:	23.7 in.
Depth:	9 in.
Valve CV:	20

# **HEADER SAM-E 108, 3" CENTERS (SST)**

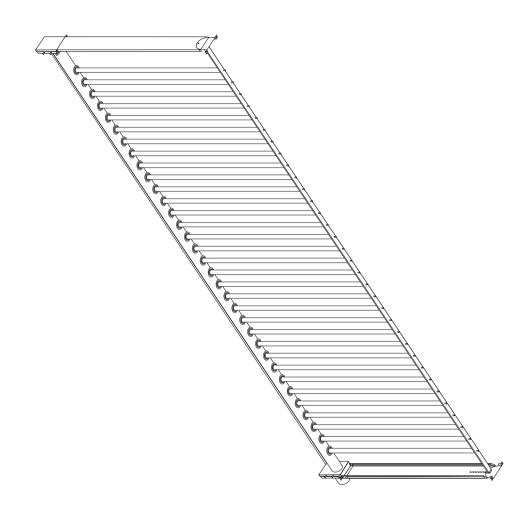
Width:	ŕ	9 in.
Height:		8.75 in.
Length:		106.25 in.

Net Weight:	43.4 lbs
Product Length:	108 in.











51.5°F

13 %

7.0 gr/lb

55.0°F

55.0°F

54.3 gr/lb 55.0°F

51.2 gr/lb

85 %

80 %

11 % 7.0 gr/lb

# Data Sheet - H-5



Opportunity Name: UAMS CAMID

Quote Name: 896314 Salesperson: Liam Berry

Date: 2024-07-23



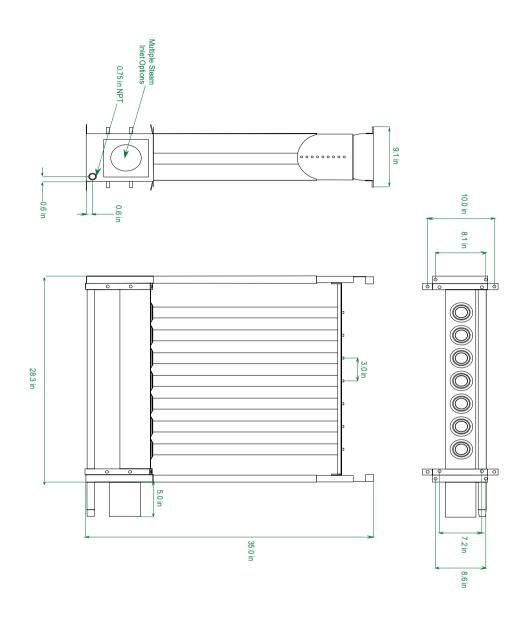
### **Calculation Basis**

Humidification Load (total)	77.1 lbs/h	Outside Air	Temperature Relative Humidity	
Load Correction	5.0 lbs/h		Absolute Humidity	
(gains/losses)		D (	Temperature	
Calculated Load	72.1 lbs/h	Before Humidification	Relative Humidity	
Duct Size	30 x 36 in.	Turniumcation	Absolute Humidity	
Duct Orientation	Horizontal	After	Temperature	
Total Air Volume	2500 CFM	Humidification	Relative Humidity	
Outside Air	100 %		Absolute Humidity	
Air Velocity	333.3 ft./min		Temperature	
Altitude	0 ft	Absolute Hu	Relative Humidity	
Air Pressure	14.7 psig		Absolute Humidity	
Humidity Increase	44.2 gr/lb	update to 300'		
		· ·		

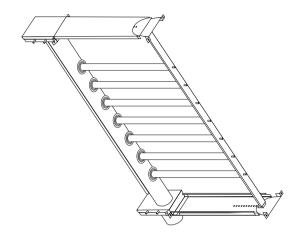
## **Product Data**

1 Todact Bata			
Valve, Bronze, 1/2" Cv=2.20			
Supplied Steam Pressure:	12 psig	Maximum Steam Pressure:	50 psig
Adjusted Maximum Capacity:	79.1 lbs/h	Width:	9.7 in.
Steam Outlet OD:	0.5 in.	Height:	11.2 in.
Quantity Steam Outlets:	1	Depth:	6 in.
Minimum Steam Pressure:	2 psig	Valve CV:	2.2
HEADER SAM-E 30, 3" CEN	ITERS (SST)		
Width:	9 in.	Net Weight:	15.4 lbs
Height:	8.75 in.	Product Length:	30 in.
Length:	28.25 in.		









# A1 - Live Steam (1594341) Description LIVESTEAM HUMIDIFIERS

**Pressurized Boiler Steam Humidifier (Isothermal Technology)** 



Pre-engineered, cost effective, humidification system designed to control and distribute steam under pressure, from a facility steam boiler, for introduction into a duct or Air Handling Unit.

The system is configured to operate with regular boiler steam, up to 50 psig, using standard bronze and stainless steel components.

Steam distributors are constructed of high quality stainless steel and can be configured for single or multiple configurations. The optional stainless steel insulation jacket encompasses 1/2" fiberglass insulation to minimize heat transfer in the air stream

All LIVESTEAM systems consist of: a steam valve, separator, actuator/linkage and steam distributor(s). Required optional components: steam trap(s), wye strainers, humidistat(s) and temperature switch.

### **FEATURES**

- · Stainless steel separators
- Bronze steam valves with stainless steel seat, stem, and plug
- Pneumatic or electric actuator/linkage
- Stainless steel steam distributors (standard or insulated)
- Single distributor capacity: up to 1501 lbs/hr @ 50 psi
- Multiple distributor capacity: up to 3209 lbs/hr @ 50 psi
- · On/Off or modulating control
- · Two-year limited warranty



# A2 - Live Steam (1594341) Schematic

### **VALVE DATA**

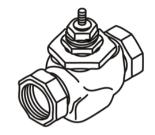
Valve Manufacturer: Schneider Electric

 Valve Model:
 VB-7263

 Valve Size:
 1/2" - 2"

Flow Type: Modified Equal Percentage

Flow Coefficient (Cv) Factor: As Specified



Valve Body Data	Material		
Maximum Static Pressure	250 Psig	Body	Bronze
Maximum Inlet Pressure (Steam)	100 Psig	Stem	Stainless Steel
Recommen ded Differential Pressure	35 Psig	Seat	Bronze
		Plug	Stainless Steel
Maximum Media Temperature	340°F(171°C)	Packing	Spring Loaded Teflon Cone
Plug Type	Parabolic	Disc	Teflon

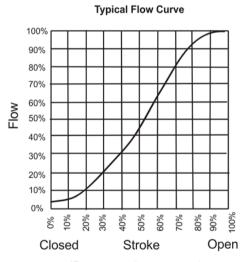
Rangeability:

Rangeability is defined as the ratio of rated flow to the minimum controllable flow.

For two-way valves, modulation occurs when plug displacement allows flow through the area between the plug and the port. The rangeability value is achieved by accurately machining the plug and port diameters for appropriate clearance. The following are normal values, with 25% tolerances.

Nominal Size		Valve	Naminal Batia	
Standard	Metric	Cv	Nominal Ratio	
		0.1	2:1	
	0.2	0.22	4:1	
		0.4	5:1	
1/2"	1 E m m	0.75	10:1	
1/2	1/2" 15mm	1.3	15:1	
		2.2	25:1	
		2.8	28:1	
		4.4	40:1	
2/4"	20mm	5.5	50:1	
3/4"		7.5	60:1	
4.11	1" 25mm	10	60:1	
1		12	75:1	
1 1/4"	32mm	20	75:1	
1 1/2"	40mm	28	75:1	
2"	50mm	40	75:1	

NORTEC reserves the right to ship the selected valve or an equivalent valve depending on availability



\*For representative purposes only



CONTROL VALVE BRONZE BODY



## A3 - Live Steam (2597632) Description

LIVESTEAM / SE Series Electric Modulating Actuator, provides motive power to operate steam valves. The actuators are designed mount directly to the valves without the use of linkages. They are linear acting and feature a return spring to close the valve in case of a loss of power. A manual override simplifies commissioning and allows the user to set the correct pre-load tension on the valve stem. The actuators are designed for safe operation and feature overload protection as well as a plenum rated polymer housing. Available control voltages include on/off, 0-10VDC, or 4- 20 mA, and 2 to 10 VDC feedback signal reports position of the valve. All actuators a operate with a 24 VAC supply voltage. For applications where only 120 VAC is available, a plug-in transformer, part 1603032, can be used.



## A4 - Live Steam (2597632) Installation

## Actuator/Valve Close-Off Pressure

Valve	Valve Part	0)/	<u> </u>	Pressure*	Actu	uator Part Nun	nber	1.1 17:44
Material	Number	cv	Size	(psig)	0-10 Vdc	4-20 mAdc	On/Off	Linkage Kit**
	1594300	0.10	0.5"	2-50	1507549	1507550	1507551	2573331
	1594302	0.22	0.5"	2-50	1507549	1507550	1507551	2573331
	1594304	0.40	0.5"	2-50	1507549	1507550	1507551	2573331
	1594306	0.75	0.5"	2-50	1507549	1507550	1507551	2573331
	1594310	1.3	0.5"	2-50	1507549	1507550	1507551	2573331
	1594314	2.2	0.5"	2-50	1507549	1507550	1507551	2573331
	1594316	2.9	0.5"	2-50	1507549	1507550	1507551	2573331
	1594318	4.4	0.5"	2-50	1507549	1507550	1507551	2573331
Bronze	1594322	5.5	0.75"	2-50	1507549	1507550	1507551	2573331
	1594324	7.5	0.75"	2-50	1507549	1507550	1507551	2573331
	1594330	10	1"	2-50	1507549	1507550	1507551	2573331
	1594332	12	1"	2-50	1507549	1507550	1507551	2573331
	1594341	20	1.25"	2-50	1507549	1507550	1507551	2573331
	4504050	00	4 5"	2-35	1507549	1507550	1507551	2573331
	1594350	28	1.5"	36-50	1507552	1507553	1507554	2573332
	4504000	40	0"	2-20	1507549	1507550	1507551	2573331
	1594360	40	2"	21-50	1507552	1507553	1507554	2573332
	1594201	0.10	0.5"	2-50	1507549	1507550	1507551	2573333
	1594203	0.22	0.5"	2-50	1507549	1507550	1507551	2573333
	1594205	0.40	0.5"	2-50	1507549	1507550	1507551	2573333
	1594206	0.75	0.5"	2-50	1507549	1507550	1507551	2573333
	1594207	0.95	0.5"	2-50	1507549	1507550	1507551	2573333
	1594208	1.3	0.5"	2-50	1507549	1507550	1507551	2573333
	1594209	1.75	0.5"	2-50	1507549	1507550	1507551	2573333
Stainless	1594210	2.2	0.5"	2-50	1507549	1507550	1507551	2573333
Steel	1594211	2.8	0.5"	2-50	1507549	1507550	1507551	2573333
	1594213	3.6	0.5"	2-50	1507549	1507550	1507551	2573333
	1594221	4.3	0.75"	2-50	1507549	1507550	1507551	2573333
	1594222	5	0.75"	2-50	1507549	1507550	1507551	2573333
	1594223	6.2	0.75"	2-50	1507549	1507550	1507551	2573333
	1594432	10	1"	2-50	1507556	1507557	1507558	2573334
	1594440	24	1.5"	2-50	1507556	1507557	1507558	2573334
	1594450	40	2"	2-50	1507556	1507557	1507558	2573334

<sup>\*</sup>Maximum operating steam pressure for LiveSteam humidifiers is 50 PSIG (15 PSIG on Steam Exchange Humidifiers)



Actuators Maximum Close-Off Pressure

<sup>\*\*</sup>Linkage Kit already included with Actuator



## A5 - Live Steam (2597632) Shop Drawing



For bronze  $\frac{1}{2}$ " – 2" and stainless steel  $\frac{1}{2}$ " –  $\frac{3}{4}$ " valves, for incoming pressures from 2 to 50 psi for all valves, except for 1 1/2" which would be 2 to 34 psi and 2" which would be 2 to 19 psi.

#### **Actuator Inputs**

Control Signal: On/Off, 0-10 Vdc, 4-20 mAdc

Power Input: See Table-1. All 24 Vac circuits are Class 2. All circuits 30 Vac and above are class 1.

Connections: 3 ft (91cm) appliance wire or plenum cables, enclosure accepts 1/2" (13mm) conduit connectors. For

M20 metric connector, use 1/2" NPT to M20 adaptor.

#### **Actuator Outputs**

#### Electrical:

**Position Feedback Voltage (proportional or floating only):** For voltage ranges, the feedback signal is the same range as the input signal. The 4-20 mAdc current range and floating actuators have a 2-10 Vdc position feedback signal. The position feedback signal can supply up to 0.5 mA to operate up to 4 additional slave actuators.

#### Mechanical:

Linear Stroke: 1/2" (13mm) nominal.

Approx. Stroke Timing: Powered, 44-60 sec.

Manual Override: Allows positioning of valve and pre-load using manual crank.

Right/Left Jumper: Permits reverse acting/direct acting linear motion (0-10 Vdc and 4-20 mAdc only).

#### Environment:

Shipping & Storage: -40 to  $160^{\circ}F$  (-40 to  $71^{\circ}C$ )

**Operating:** -22 to 140°F (-30 to 60°C)

Temperature Restrictions: For maximum ambient 140°F (60°C) the maximum allowable fluid temperature should

not exceed 366°F (186°C).

Humidity: 15-95%RH, non-condensing

Location: NEMA 1. NEMA 2 (enclosure is air plenum rated), UL Type 2 (IEC IP54) with customer supplied water

tight conduit connectors.

Overall Dimensions: 6.76" (172mm) x 3.5" (89mm) x 6.31" (160mm)

#### **Agency Listings**

UL 873: Underwriters Laboratories (File #E9429 Category Temperature-Indicating and Regulating Equipment). CUL: UL Listed for use in Canada by Underwriters Laboratories. Canadian Standards C22.2 No. 2493.

#### Table 1

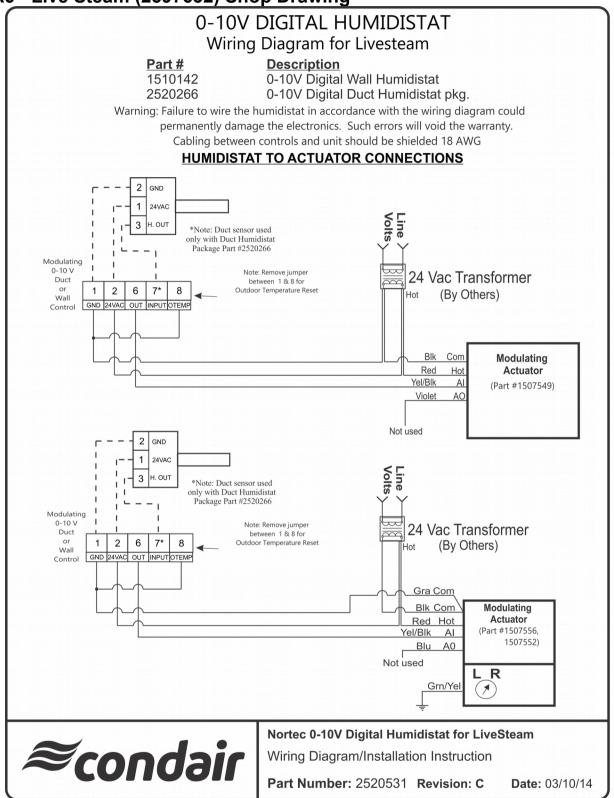
		8.77		Actua	tor Po	wer Ir	nput		2005 E 115-7	Approx. Stroke		Output	
Part Control	Control		Running Holding						Linear	Timing		Force Rating	
Number		Voltage	50Hz 60Hz		Ηz		50/60Hz	Stroke Inches	in Seconds @ 70°F (21°C)		lb (Newton)		
			VA	W	VA	W	Amps	W		Powered	Spring Return	Min.	Max Stall
1507549 1507550	0-10 Vdc 4-20 mAdc	24 Vac±20%	6.6	4.2	6.6	4.2	0.14	1.5	1/2	60	16		-
1507551	On/Off	20-30 Vdc	5.3	4.1	5.3	4.1	0.15	1.2		44	19		



Electric Actuator Part # 1507549, 1507550, 1507551

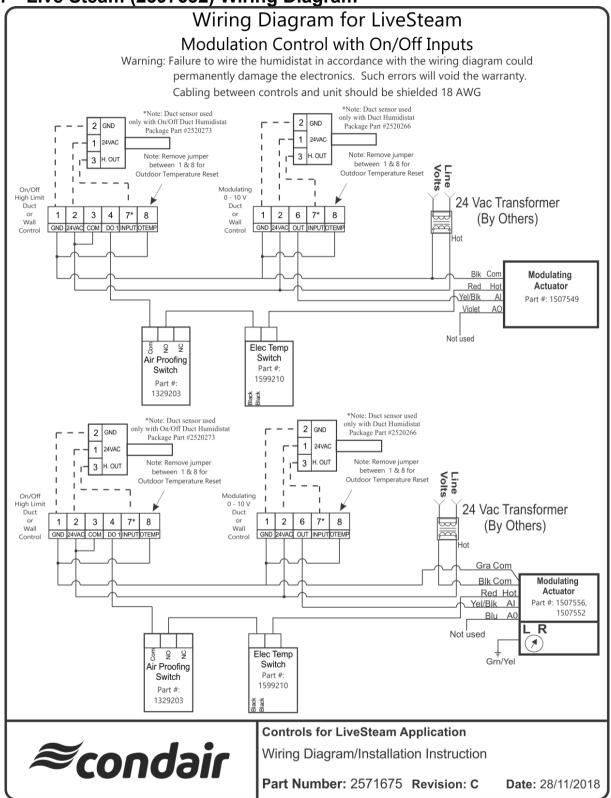


## A6 - Live Steam (2597632) Shop Drawing





## A7 - Live Steam (2597632) Wiring Diagram





A8 - Live Steam (2597652) Description

<u>LIVESTEAM Wye Strainer</u>, used in the supply steam line to remove impurities by filtering the steam through a strainer screen.



## A9 - Live Steam (2597652) Shop Drawing

### STRAINER DATA

Strainer Type: "Y" Type
Strainer Size: ½" to 3"
Connection: NPT

Body Material: Cast Iron

Screen Material: 20 Mesh Stainless Steel

Pressure (non-shock): 250 psi (1725 kPa) - 406°F (208°C)

Installation: The strainer should be installed with the flow direction as

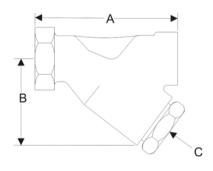
indicated on the body, in a vertical down or horizontal pipe line. The strainer must be accessible for periodic removal of accumulated debris by either blowing down or removal and

cleaning of the screen.

Type	IT
туре	11
Sizes	1/2" to 3"
Connections	NPT
Construction	Cast Iron
Maximum Saturated Steam Pressure	250 psig
Standard Screen	20 Mesh Type 304 Stainless Steel

No	Part	Material
1	Body	Cast Iron
2	Bushing (1/4" - 2")	Malleable Iron
2A	Cap (2 1/2" - 3")	Cast Iron
3	Cap Gasket (2 1/2" & 3")	Graphite
4	Standard Screen	Stainless Steel Type 304

Dimension	Α	В	С	Weight
Size	inch	inch	NPT	lbs
1/2	3-3/16	2-1/16	3/8"	1.2
3/4	3-3/4	2-7/16	1/2"	2.9
1	4	2-5/8	3/4"	4.3
1-1/4	5	3-3/8	1"	6.5
1-1/2	5-3/4	3-7/8	1-1/4"	9.6
2	7	4-3/4	1-1/2"	12.9
2-1/2	9-1/4	5-7/8	1-1/4"	22.0
3	10.0	6	1-1/4"	35.0





Strainer - Cast Iron Nortec Part #159-9620 to 159-9627



## A10 - Live Steam (2597652) Shop Drawing

### STRAINER DATA

Steam Pr	ressure				Strai	iner No	minal l	Diamete	er in In	ches			
		3/4		1		1 1	1 1/4		1 1/2		2		1/2
psig	kPa	lbs/hr	lbs/hr kg/hr ll		kg/hr	lbs/hr	lbs/hr kg/hr		lbs/hr  kg/hr		lbs/hr kg/hr		kg/hr
2	14	105	48	182	83	255	116	346	157	638	290	912	414
5	34	124	56	215	98	301	137	409	186	753	342	1075	489
10	69	155	70	270	123	378	172	512	233	944	429	1348	613
15	103	186	85	324	147	454	206	616	280	1135	516	1621	737
20	138	218	99	379	172	530	241	720	327	1326	603	1894	861
25	172	249	113	433	197	607	276	824	374	1517	690	2167	985
30	207	281	128	488	222	683	311	927	421	1708	776	2440	1109
35	241	312	142	543	247	760	345	1031	469	1899	863	2713	1233
40	276	343	156	597	271	836	380	1135	516	2090	950	2986	1357
45	310	375	170	652	296	912	415	1238	563	2281	1037	3259	1481
50	345	406	185	706	321	989	450	1342	610	2472	1124	3532	1605



Strainer Size Performance Data



A11 - Live Steam (2577157) Description

<u>LIVESTEAM Steam Trap</u>, float and thermostatic for pressures up to 15 psig. The trap allows removal of condensate from a pressurized steam system while preventing the passage of steam.



## A12 - Live Steam (2577157) Shop Drawing

TRAP DATA

Trap Type: Float and Thermostatic

3/4" NPT **Trap Connection:** 

Cast Iron Body and Cover. Stainless Steel Internals. Construction:

**Maximum Operating Pressure:** 15 psig (103 kPa) Nortec Part #2577157

75 psig (103 kPa) Nortec Part #1599602

Installation:

Full port isolating valves should be placed to permit servicing. The trap should be installed below the drainage point with a collecting leg before the trap, in a position so that the float arm is in a horizontal plane so that the float rises and falls vertically, and with the direction of flow as indicated on the body. The trap has 4 orifices and 2 plugs

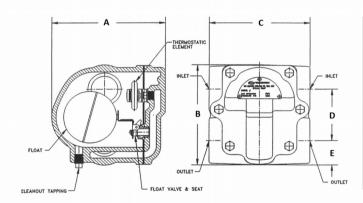
to facilitate installation.

Maintenance: This product can be maintained without disturbing the

piping connections. Complete isolation from both supply and return line is required before any servicing is

performed.

	Dimensions in (cm)									
	Cleanout									
	Α	В	С	D	E	Weight	port	Ports		
2577157/	5-3/4	5-11/16	4-7/8	3-3/8	1-5/32	12 lbs		4 ports, 2 plugs,		
1599602	(14.6)	(14.4)	(12.3)	(8.5)	(2.9)	(5.4 kg)	1/4"NPT	3/4" NPT		



Consti	ruction Materials				
Part	Material				
Body	Class 30 Cast Iron				
Сар	Class 30 Cast Iron				
Disc	Stainles Steel & Brass				
Hinge	Brass				
Pin, Hinge	Stainles Steel				
Gasket	non Asbestos Fiber				
Seat	SST, Brass Holder				
Valve	Stainless Steel				
Clip	Stainless Steel				
Lever & float	Stainless Steel				
Plug 1/4" NPT	Steel				



Steam Trap - F&T Cast Iron Nortec Part # 2577157, 1599602



# A13 - SAM-e (2549922) Description SAM-e HEADERS

The SAM-e distributes clean steam, precisely controlled, uniformly into the entire air stream, and void of any condensate spray. Steam distribution takes place via steam tubes with integrated nozzles. The steam is kept dry as condensate is drained through the main header.

The stainless steel headers are typically installed with vertical tubes for horizontal airflow applications, but can also be mounted horizontally (10 deg. incline from horizontal) for vertical airflow applications. The headers can be ordered 3, 6, 9, or 12 inch center to center tube spacing for maximum flexibility and optimal steam distribution..

Manufactured out of high grade 304 stainless steel, the header features welded inlet and condensate connections to ensure leak-free operation. Stainless steel inlet adapter is factory supplied for connection to steam supply line(s), allowing maximum flexibility, and simplification of installation. Specialized synthetic grommets form an air and water-tight seal around the base of the steam tubes, simplifying installation and ensuring reliable leaf-free operation.

Headers are also available with optional 304 stainless steel insulation. This metal shielding creates an insulating air-gap around the header which minimizes heat transfer by conduction and convection, while the reflective surface minimizes heat transfer by radiation. Insulating the header in this manner increases energy efficiency by up to 70%, and results in significantly reduced airstream heat gain and steam condensate loss.

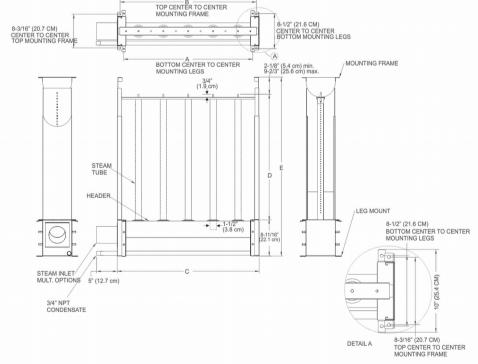
#### **FEATURES**

- Steam tubes with end support bracket for easy installation.
- All stainless steel distributors and nozzles ensure permanent bond.
- Stainless steel header with rubber grommet seals for easy installation of steam tubes.
- Includes hose cuffs and clamps for steam line connections.
- Adjustable mounting frame available for quick and easy installation.
- Available with 3", 6", 9" or 12" center to center steam tube spacing.
- Available insulated for increased energy efficiency and reduced airstream heat gain.
- High capacities.
- Ten year limited warranty.



## A14 - SAM-e (2549922) Shop Drawing

Duct	Width	Δ		В	3	c	;	Duct	Height	Tube l		E Min.		E Max.	
in	cm	in	cm	in	cm	in	cm	in	cm	in	cm	in	cm	in	cm
18	45.7	13 1/8	33.3	14 7/8	37.8	16 1/4	41.3	18	45.7	5 1/2	14.0	17	43.2	24 2/3	62.
24	61.0	19 1/8	48.6	20 7/8	53.0	22 1/4	56.5	24	61.0	11 1/2	29.2	23	58.4	30 2/3	77.
30	76.2	25 1/8	63.8	26 7/8	68.3	28 1/4	71.8	30	76.2	17 1/2	44.5	29	73.7	36 2/3	93.
36	91.4	31 1/8	79.1	32 7/8	83.5	34 1/4	87.0	36	91.4	23 1/2	59.7	35	88.9	42 2/3	108
42	106.7	37 1/8	94.3	38 7/8	98.7	40 1/4	102.2	42	106.7	29 1/2	74.9	41	104.1	48 2/3	123
48	121.9	43 1/8	109.5	44 7/8	114.0	46 1/4	117.5	48	121.9	35 1/2	90.2	47	119.4	54 2/3	138
54	137.2	49 1/8	124.8	50 7/8	129.2	52 1/4	132.7	54	137.2	41 1/2	105.4	53	134.6	60 2/3	154
60	152.4	55 1/8	140.0	56 7/8	144.5	58 1/4	148.0	60	152.4	47 1/2	120.7	59	149.9	66 2/3	169
66	167.6	61 1/8	155.3	62 7/8	159.7	64 1/4	163.2	66	167.6	53 1/2	135.9	65	165.1	72 2/3	184
72	182.9	67 1/8	170.5	68 7/8	174.9	70 1/4	178.4	72	182.9	59 1/2	151.1	71	180.3	78 2/3	199
78	198.1	73 1/8	185.7	74 7/8	190.2	76 1/4	193.7	78	198.1	65 1/2	166.4	77	195.6	84 2/3	215
84	213.4	79 1/8	201.0	80 7/8	205.4	82 1/4	208.9	84	213.4	71 1/2	181.6	83	210.8	90 2/3	230
90	228.6	85 1/8	216.2	86 7/8	220.7	88 1/4	224.2	90	228.6	77 1/2	196.9	89	226.1	96 2/3	245
96	243.8	91 1/8	231.5	92 7/8	235.9	94 1/4	239.4	96	243.8	83 1/2	212.1	95	241.3	102 2/3	260
102	259.1	97 1/8	246.7	98 7/8	251.1	100 1/4	254.6	102	259.1	89 1/2	227.3	101	256.5	108 2/3	276
108	274.3	103 1/8	261.9	104 7/8	266.4	106 1/4	269.9	108	274.3	95 1/2	242.6	107	271.8	114 2/3	291
114	289.6	109 1/8	277.2	110 7/8	281.6	112 1/4	285.1	114	289.6	101 1/2	257.8	113	287.0	120 2/3	306
120	304.8	115 1/8	292.4	116 7/8	296.9	118 1/4	300.4	120	304.8	107 1/2	273.1	119	302.3	126 2/3	321
126	320.0	121 1/8	307.7	122 7/8	312.1	124 1/4	315.6	126	320.0	113 1/2	288.3	125	317.5	132 2/3	337
132	335.3	127 1/8	322.9	128 7/8	327.3	130 1/4	330.8	132	335.3	119 1/2	303.5	131	332.7	138 2/3	352
138	350.5	133 1/8	338.1	134 7/8	342.6	136 1/4	346.1	138	350.5	125 1/2	318.8	137	348.0	144 2/3	367
144	365.8	139 1/8	353.4	140 7/8	357.8	142 1/4	361.3	144	365.8	131 1/2	334.0	143	363.2	150 2/3	382



**≋**condair

SAM-e General Dimensions July 5, 2012



A15 - SAM-e (2549922) Shop Drawing

	Air Pressure Loss [ in(mm) of water column ]									
Air Velocity [ fpm (m/s) ]		SAM-e Tube Spacing								
[.p (, 5/]	3" (762 mm)	6" (152 mm)	9" (229 mm)	12" (305 mm)						
500 (2.5)	0.01 (0.3)	0.01 (0.3)								
750 (3.8)	0.03 (0.8)	0.01 (0.3)	No measurable data							
1000 (5.1)	0.05 (1.3)	0.02 (0.5)								
1250 (6.4)	0.07 (1.8)	0.03 (0.8)								
1500 (7.6)	0.09 (2.3)	0.04 (1.0)	0.01 (0.3)	0.01 (0.3)						
1750 (8.9)	0.10 (2.5)	0.06 (1.5)	0.01 (0.3)	0.01(0.3)						
2000 (10.2)	0.12 (3.0)	0.08 (2.0)	0.01(0.3)	0.01 (0.3)						



SAM-e Static Air Pressure Table July 15, 2016



## A16 - SAM-e (1503419) Description

Steam DISTRIBUTOR, Type B for SAM-e, 304ss, suitable for capacities up to 36 lbs/hr (16 kg/hr). Constructed of 1.5" O.D. (3.8 cm) high-grade stainless steel tubing, the distributors can accommodate duct heights between 24"-144" for in-duct header mounting, and between 18"-144" for outside duct header mounting. Each distributor has 48 stainless steel nozzles to evenly disperse steam into the duct or air handling unit.

The steam tubes come equipped with evenly spaced stainless steel nozzles providing optimum steam distribution, over the entire length of tube. These nozzles extend into the center of the steam tube ensuring only condensate-free steam is released. Condensate drains out of the steam tubes, and through the header, eliminating the need for jacketed tubes. A permanent bond between the nozzle and steam tube is made when the nozzle is hydraulically pressed into the tube. They have the same thermal expansion characteristics guaranteeing a permanent union. The specifically sized orifices ensure consistent output from each nozzle.

Steam distributors are available with optional 304 stainless steel insulation. Tube insulation consists of two 304 stainless steel shields, which are clamped onto the distributor tubes forming an insulating air gap around the tube while leaving a small gap for the nozzles to release steam. For tube insulation, contact and heat transfer between stainless steel shields and distributor to be limited using a 'knife edge' type angled contact. The air gap reduces heat transfer through conduction and convection, while the reflective surfaces minimize heat transfer through radiation.

#### **FEATURES**

- Capacities of 36 lbs/hr (16 kg/hr) per tube.
- Nozzle design ensures only condensate-free steam is dispersed and prevents spitting.
- Stainless steel nozzles are pressed into tube ensuring permanent bond.
- Available insulation improves energy efficiency by as much as 70%.
- · Can be retrofit with insulation in the field.
- Maintenance free.
- · Ten year limited warranty.



## A17 - SAM-e (1503419) Shop Drawing

## 304 SS SAM-e Short Absorption Manifold Tubes

In-Duct Height Including Header in (cm)	Type A 15 lbs/hr (7 kg/hr)	Type B 35 lbs/hr (16 kg/hr)	Type B+ 55 lbs/hr (25 kg/hr)	Type C 75 lbs/hr (34 kg/hr)	"L" Dimension in (cm)	In-Duct Optional Mounting Frame	Steam Tube Profile
18 (45.7)	1503388	N/A	N/A	N/A	5.5 (14.0)	1504607	(C <sub>2</sub> )
24 (61.0)	1503389	1503411	N/A	N/A	11.5 (29.2)	1504697	<b>A</b>
30 (76.2)	1503390	1503412	1509391	N/A	17.5 (44.5)	1503469	
36 (91.4)	1503391	1503413	1509392	1503440	23.5 (59.7)	1303403	0
42 (106.7)	1503392	1503414	1509393	1503441	29.5 (74.9)		
48 (121.9)	1503393	1503415	1509394	1503442	35.5 (90.2)	1503470	
54 (137.2)	1503394	1503416	1509395	1503443	41.5 (105.4)	1303470	0
60 (152.4)	1503395	1503417	1509396	1503444	47.5 (120.7)		
66 (167.6)	1503396	1503418	1509397	1503445	53.5 (136.9)		0
72 (182.9)	1503397	1503419	1509398	1503446	59.5 (151.1)		
78 (198.1)	1503398	1503420	1509399	1503447	65.5 (166.4)		0
84 (213.4)	1503399	1503421	1509400	1503448	71.5 (181.5)	1503471	0
90 (228.6)	1503400	1503422	1509401	1503449	77.5 (196.9)	14 1882 - 1882 - 1882 27 1882 - 1882 - 1883 28 1802 - 1804 - 1804	
96 (243.8)	1503401	1503423	1509402	1503450	83.5 (212.1)		0
102 (259.1)	1503402	1503424	1509403	1503451	89.5 (227.3)		
108 (274.3)	1503403	1503425	1509404	1503452	95.5 (242.6)		0
114 (289.6)	1503404	1503426	1509405	1503453	101.5 (257.8)		0
120 (304.8)	1503405	1503427	1509406	1503454	107.5 (273.1)		
126 (320.0)	1503406	1503428	1509407	1503455	113.5 (288.3)	1503472	0
132 (335.3)	1503407	1503429	1509408	1503456	119.5 (303.5)		<b>*</b>
138 (350.5)	1503408	1503430	1509409	1503457	125.5 (318.8)		
144 (365.8)	1503409	1503431	1509410	1503458	131.5 (334.0)		



304 SS SAM-e Short Absorption Manifold Tubes July 5, 2012



## A18 - SAM-e (2538853) Description

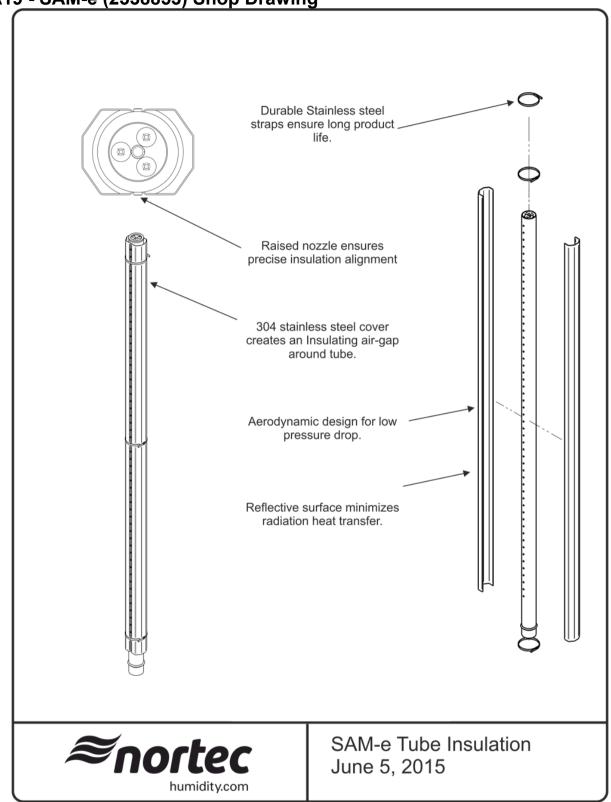
<u>SAM-e Tube Insulation (1 req'd for each tube)</u>, compatible with all SAM-e and mini SAM-e tubes. Constructed high quality 304 stainless steel, this shielding provides an insulating air gap around the steam tubes. The insulating air-gap significantly reduces energy losses from hot distributor tubes. Insulation can be factory installed on new orders or easily retrofit to existing installations. When ordering, order insulation to match tube length.

#### **FEATURES**

- Improve energy efficiency by as much as 70%.
- Reduce condensate losses.
- · Minimal heat gain into air-stream.
- · Aerodynamic design minimizes pressure losses.
- Fiberglass free and non-hygroscopic for hygienic operation.
- · Easily retrofit to existing installations.
- Maintenance free.
- Tube insulation consists of two stainless steel shields that are clamped onto the distributor tubes, leaving a small gap for the steam nozzles to release steam. Contact and heat transfer between the insulating shields and the tube is prevented by using an angled knife edge along each shield. The resulting air gap around the tube reduces heat transfer through conduction and convection, while the reflective surfaces minimize heat transfer through radiation.



A19 - SAM-e (2538853) Shop Drawing



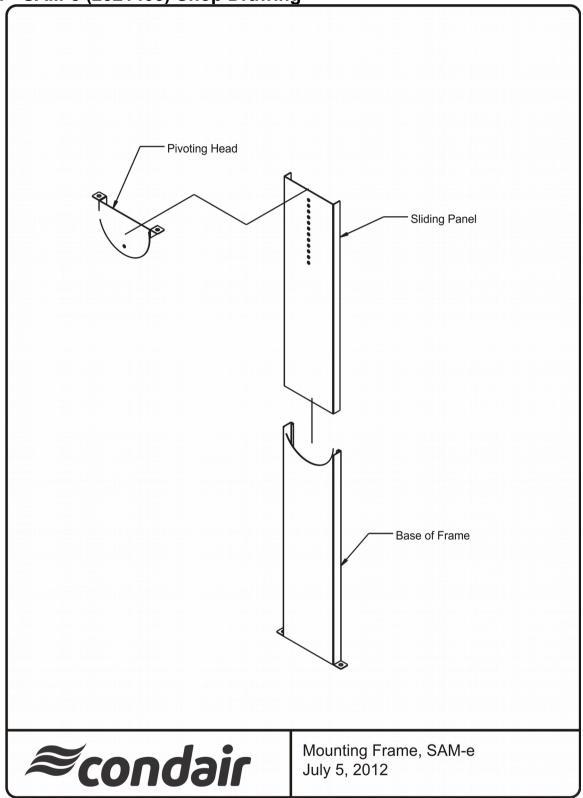


## A20 - SAM-e (2521405) Description

**Mounting FRAME, Adjustable for SAM-e**, Constructed of stainless steel, the mounting frame provides support and allows for a quick and easy installation. The telescopic frame can be adjusted to suit the duct or air handling unit. The mounting frame is optional for horizontal duct applications, but required for vertical duct applications.



A21 - SAM-e (2521405) Shop Drawing





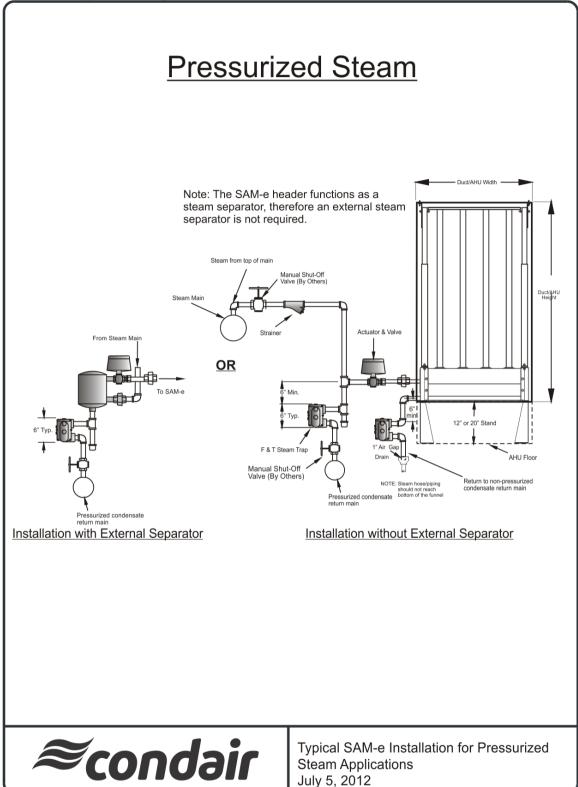
## A22 - SAM-e (1503476) Description

Pressure Inlet Adapter Kit for SAM-e

Provides an NPT threaded connection for connecting a SAM-e Short Absorption Manifold to a LiveSteam or pressure steam system. Inlet adapter kits are constructed from high quality stainless steel and are factory welded to the SAM-e header. Pressure inlet kits also include an internal baffle to separate steam from condensate allowing operation without the need for an external separator.

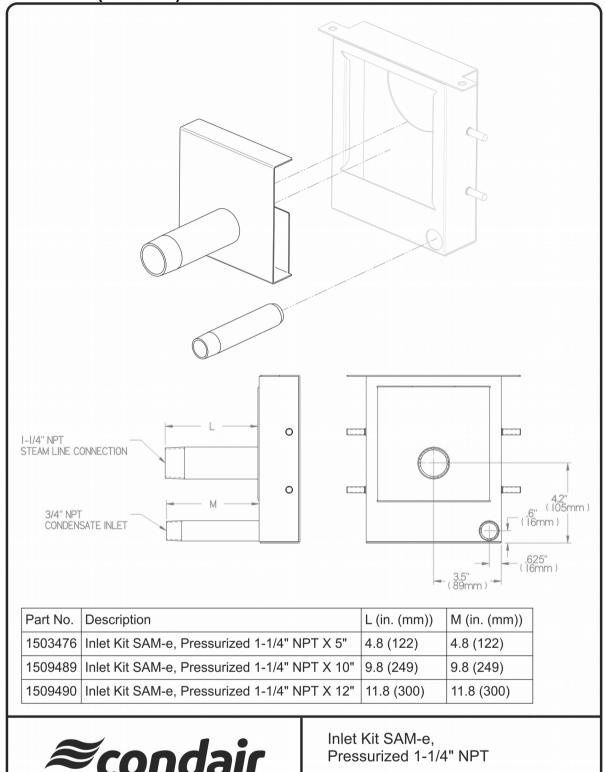


## A23 - SAM-e (1503476) Installation





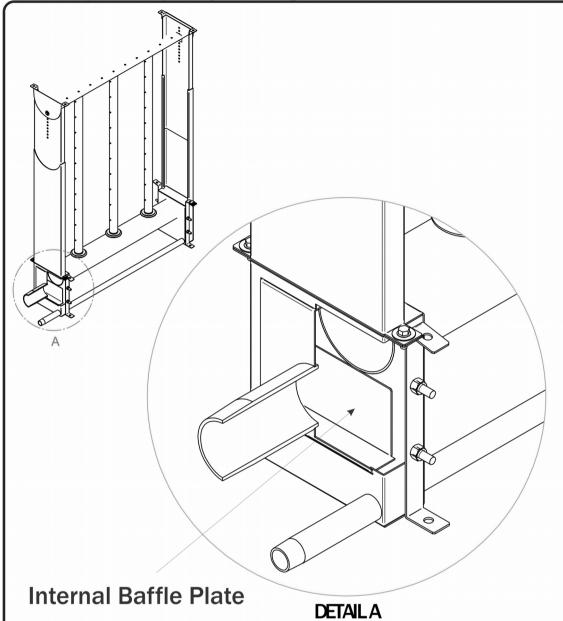
## A24 - SAM-e (1503476) Schematic







A25 - SAM-e (1503476) Shop Drawing



All pressurized SAM-e inlet kits come with a standard internal baffle plate. The baffle plate redirects the flow of steam causing condensate to 'fall out', eliminating the need to install an external steam separator.



SAM-e Internal Baffle Plate July 5, 2012



## A26 - SAM-e (2591657) Description

<u>SAM-e Top Center Mount Bracket</u>; provides additional support and rigidity for cases where a SAM-e will be shipped fully assembled insided of an air handling unit. This option is typically used when shipping the SAM-e for installation at an Air Handling Unit manfuacturer.



A27 - SAM-e (2591658) Description

SAM-e Side Yoke (x2), provides an additional two adjustable side yokes. This can be used as either a replacement for existing yokes, or to double up the existing yokes for additional strength.



## A28 - SAM-e (1503391) Description

Steam DISTRIBUTOR, Type A for SAM-e, 304ss, suitable for capacities up to 15 lbs/hr (7 kg/hr). Constructed of 1.5" O.D. (3.8 cm) high-grade 304 stainless steel tubing, the distributors can accommodate duct heights between 18"-144" for in-duct header mounting, and between 8"-144" for outside duct header mounting. Each distributor has 20 stainless steel nozzles to evenly disperse steam into the duct or air handling unit.

The steam tubes come equipped with evenly spaced stainless steel nozzles providing optimum steam distribution, over the entire length of tube. These nozzles extend into the center of the steam tube ensuring only condensate-free steam is released. Condensate drains out of the steam tubes, and through the header, eliminating the need for jacketed tubes. A permanent bond between the nozzle and steam tube is made when the nozzle is hydraulically pressed into the tube. They have the same thermal expansion characteristics guaranteeing a permanent union. The specifically sized orifices ensure consistent output from each nozzle.

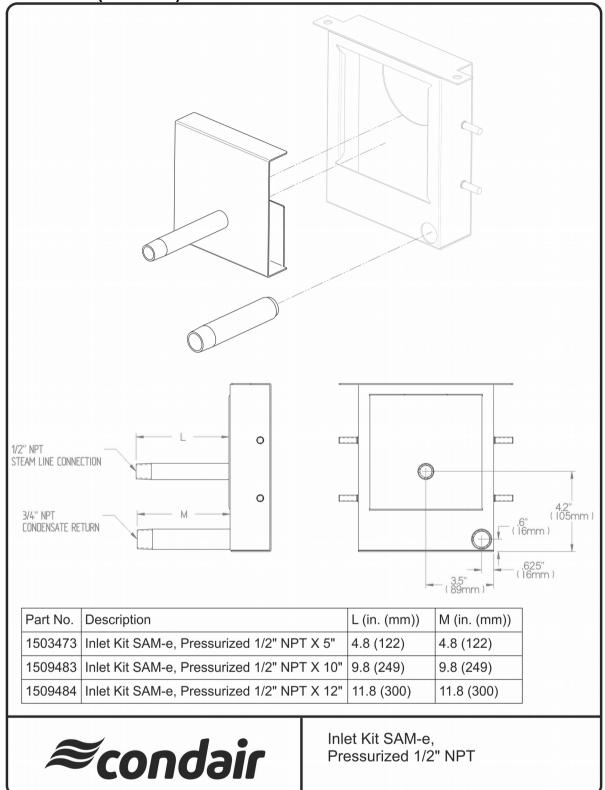
Steam distributors are available with optional 304 stainless steel insulation. Tube insulation consists of two 304 stainless steel shields, which are clamped onto the distributor tubes forming an insulating air gap around the tube while leaving a small gap for the nozzles to release steam. For tube insulation, contact and heat transfer between stainless steel shields and distributor to be limited using a 'knife edge' type angled contact. The air gap reduces heat transfer through conduction and convection, while the reflective surfaces minimize heat transfer through radiation.

#### **FEATURES**

- Capacities of 15 lbs/hr (7 kg/hr) per tube.
- · Nozzles design ensures only dry steam is dispersed and prevents spitting.
- Stainless steel nozzles are pressed into tube ensuring permanent bond.
- Available insulation improves energy efficiency by as much as 70%.
- · Can be retrofit with insulation in the field.
- Maintenance free.
- · Ten year limited warranty.



## A29 - SAM-e (1503473) Schematic





## A30 - Mini SAM-e (2538925) Description

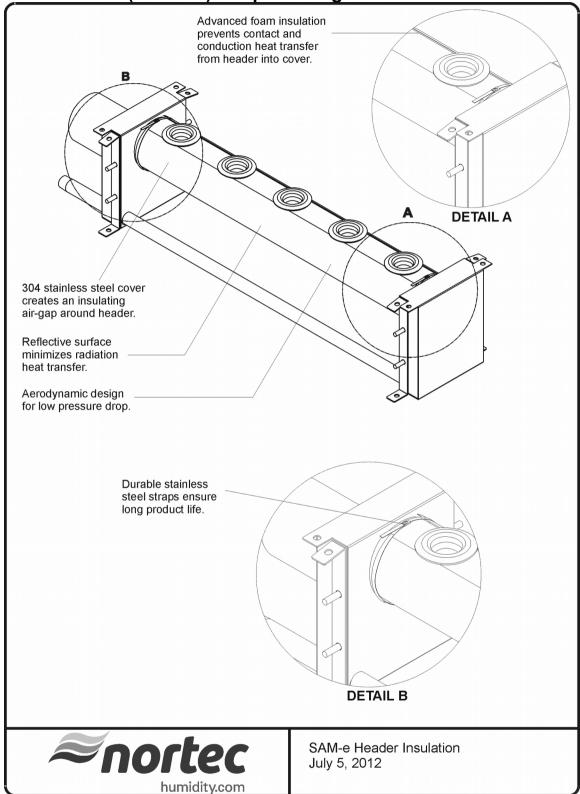
<u>SAM-e Header Insulation</u>, compatible with all SAM-e and mini SAM-e headers. Constructed from high quality 304 stainless steel, this shielding provides an insulating air gap around the header. The insulating airgap significantly reduces energy losses from hot distributor headers. Insulation can be factory installed on new orders or easily retrofit to existing installations. When ordering, order insulation to match header length.

#### **FEATURES**

- Improve energy efficiency by as much as 70%.
- · Reduced condensate losses.
- · Minimal heat gain into air-stream.
- · Aerodynamic design minimizes pressure losses.
- Fiberglass free and non-hygroscopic for hygienic operation.
- Easily retrofit to existing installations.
- · Maintenance free.
- Header insulation consists of a stainless steel shield that is clamped onto the distributor header, leaving a small gap for the steam tubes to protrude. Contact and heat transfer between the insulating shield and the tube is prevented by using strips of synthetic foam insulation. The resulting air gap around the header reduces heat transfer through conduction and convection, while the reflective surfaces minimize heat transfer through radiation.

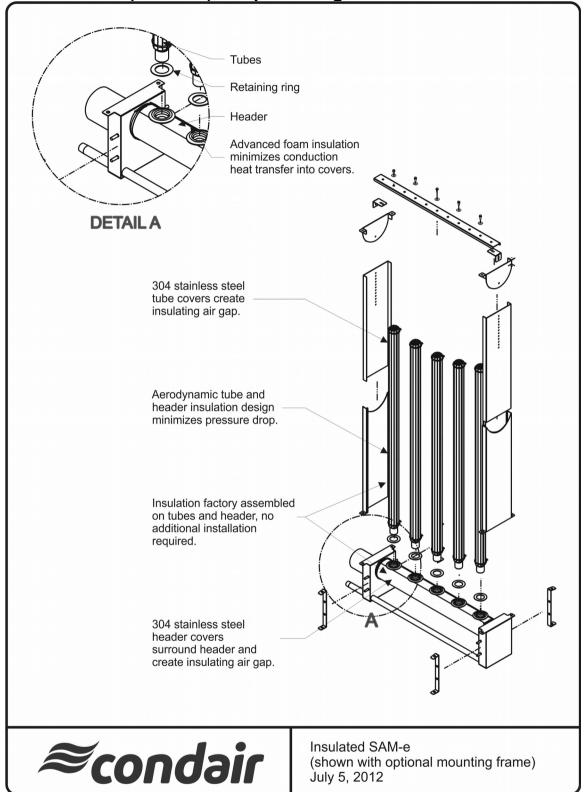


A31 - Mini SAM-e (2538925) Shop Drawing





## A32 - Mini SAM-e (2538925) Shop Drawing





#### **TERMS & CONDITIONS OF SALE**

#### PRICES:

All prices are LIST price. All prices and discount factors are subject to change without notice.

#### **ORDERS:**

All orders must be in writing (made out to Condair Inc. or Condair Ltd. hereinafter collectively referred to as Condair) or submitted through Help software, and are subject to acceptance by Condair's Credit Manager prior to production release and are contingent upon governmental regulations, availability of labor and materials, strikes, accidents, fires, and all other causes beyond the control of Condair.

#### SHIPPING TERMS:

Shipping Terms: All packaged goods, (electric and gas-fired) humidifiers, SAM-e, Livesteam distribution systems, HP, ML and AirFog, are shipped FOB factory, standard ground freight included to the continental United States and Canada. Parts orders that are over \$1,000 net invoice value are shipped freight included. All air freight charges are extra. Export crating and export shipping costs are extra.

#### **RISK OF LOSS & DAMAGE:**

Risk of loss or damage passes to the Buyer when the equipment described herein is delivered to the carrier. Any claim for goods lost or damaged in transit, shall be made by the Buyer against the carrier.

#### **CHANGED OR CANCELLED ORDERS:**

- All changed or cancelled orders, in production or completed, are subject to a charge of 30%.
- Orders other than "Quick Ship Orders" for packaged products (e.g. electric, gas-fired) may generally be cancelled within 48 hours of being placed. Condair will make every effort to stop production of an order upon written notice of cancellation. If production has not started, Condair will waive the cancellation charge.
- Orders for equipment specially fabricated cannot be cancelled. E.g. SAM-e, LiveSteam, HP, ML, ME, and DL.
- Parts orders that are regular stock items are not subject to a cancellation charge. However, if a parts order is changed, which includes adding new parts to an order; this may cause a delay in delivery.

#### **RETURNED GOODS:**

- Condair will accept unused equipment returned for credit only when prior approval has been given. Prior to returning goods
  a Return Material Authorization Number (RMA) must be obtained and it must be clearly marked on all returned goods.
  Goods received without an RMA will not be accepted and credit will not be issued. Any material accepted for return must be
  shipped back prepaid by the Buyer and must reach Condair without damage.
- An RMA will only be issued within 3-months of the equipment's shipping date.
- Any unused equipment accepted for return is subject to a 30% restocking charge.
- Equipment specially fabricated, cannot be returned. E.g. SAM-e, Livesteam, HP, ML, ME, and DL.
- Credit will only be issued to the original purchaser.
- Credit will be issued in the form of a credit note, which can be used towards a future purchase.

#### **WARRANTY - UNITS:**

Condair warrants for a period of two years after installation or 30 months from the manufacturer's ship date, whichever is earlier, that Condair's manufactured and assembled products, not otherwise expressly warranted, are free from defects in material and workmanship. No warranty is made against corrosion, deterioration, or suitability of substituted materials used as a result of compliance with government regulations. Extended warranties are available for most Condair manufactured products at the time of initial product order.

Condair's obligations and liabilities under this warranty are limited to furnishing replacement parts to the customer, F.O.B. Condair's factory, providing the defective part(s) is returned freight prepaid by the Buyer. Parts used for repairs are warranted for the balance of the term of the warranty on the original humidifier or 90 days, whichever is longer.



The warranties set forth herein are in lieu of all other warranties expressed or implied by law. No liability whatsoever shall be attached to Condair until said products have been paid for in full and then said liability shall be limited to the original purchase price for the product. Any further warranty must be in writing, signed by an officer of Condair. In no event will Condair be liable for any incidental, special, indirect or consequential damages or for loss of profits, business or goodwill whether based in contract or in tort or other liability to provide indemnification or any other remedy. This limitation applies whether or not Condair has been advised or is aware of the possibility of such damages.

Condair's limited warranty on accessories, not of Condair's manufacture, such as controls, humidistats, pumps, etc. is limited to the warranty of the original equipment manufacturer from date of original shipment of the products to the Buyer.

Condair makes no warranty and assumes no liability unless the equipment is installed in strict accordance with a copy of the catalog and installation manual in effect at the date of purchase and by a contractor approved by Condair to install such equipment. Condair makes no warranty and assumes no liability whatsoever for consequential damage or damage resulting directly from misapplication, incorrect sizing or lack of proper maintenance of the equipment. Condair retains the right to change the design, specification and performance criteria of its products without notice or obligation.

Extended warranties for 1, 2, or 3 additional years can be purchased at time of order only through Help Software.

Parts or materials that are considered consumables, including but not limited to: cylinders, filters, nozzles, membranes, media, gaskets, O-rings, etc. are NOT covered by the warranty.

Condair makes no warranty and assumes no liability whatsoever for damage resulting from freezing of the humidifier, supply lines, drain lines, or quality of the water used.

#### **REPLACEMENT PARTS:**

- All requests for replacement parts, whether they are for warranty consideration or not, require a covering purchase order, prior to Condair releasing the goods. Goods will be shipped to the Buyer with an invoice.
- To obtain credit for parts covered by Condair's warranty, defective parts must be returned for inspection. To return parts the
  Buyer must request a Return Material Authorization (RMA) and it must be clearly marked on all returned parts. Parts
  returned without an RMA will not be accepted and credit will not be issued. All parts returned for credit must be shipped
  back prepaid by the Buyer.
- All parts must be returned within 3-months of an RMA being issued. Parts returned more than 3-months from when the RMA was issued will not be accepted.
- Credit for parts covered under warranty will be issued, if inspection indicates the returned parts are defective.

#### **PAYMENT:**

Terms of payment are net 30 days from date of invoice, unless otherwise specified. The offer of these terms is contingent upon approval by the Credit Manager at the time of receipt of the Buyer's official order. The Buyer agrees that interest on all overdue accounts may be charged monthly at a rate of 2.0% per month (24% per annum). Maintaining good credit will assist in meeting delivery. For quick ship orders, contact factory for pricing.