

APPLICATION FOR OSHPD SPECIAL SEISMIC	OFFIC	CE USE ONLY
CERTIFICATION PREAPPROVAL (OSP)	APPLICATION #:	OSP – 0277 – 10
OSHPD Special Seismic Certification Preapproval (OSP)		
Type: 🗌 New 🛛 Renewal		
Manufacturer Information		
Manufacturer: The Trane Company		
Manufacturer's Technical Representative: Steve Lotspaih		
Mailing Address: 3600 Pammel Creek Road, La Crosse, WI 54601		
Telephone: 608-787-4100 Email: slotspai	<u>h@trane.com</u>	
Product Information		
Product Name: Performance Climate Changer		
Product Type: Packaged Air Conditioning Units		
Product Model Number:PCC Sizes 003 – 030 (CSAA)(List all unique product identification numbers and/or part numbers)General Description:Suspended external vibration isolated Air Condition	ing Units. Sizes are det	ermined by coil area
as depicted in the Certified Product and Certified Subcomponent Matri pre-approval. Seismic enhancements made to the test units and modi	ces. Stacked units are e	excluded from this
during the tests shall be incorporated into the production unit.		
Mounting Description: <u>Suspended from building structure with spring</u>	isolated hangers.	
Applicant Information		
Applicant Company Name: The VMC Group		
Contact Person: John Wilson, Jr.		
Mailing Address: 113 Main St, Bloomingdale NJ, 07403		
Telephone: 973-838-1780 Email: jwilson	@thevmcgroup.com	
I hereby agree to reimburse the Office of Statewide Health Pl accordance with the California Administrative Code, 2013.	anning and Develop	oment review fees in
Signature of Applicant:	Dat	e: <u>12/2/13</u>
Title: CEO Company Name: The VM	//C Group	
"Access to Safe. Quality Healthcare Environments that Meet California's Diverse and Dynamic Needs"	MMM	osDpd
STATE OF CALIFORNIA – HEALTH AND HUMAN SERVICES AGENCY OSH-FD-759 (REV 1/24/13)	1	Page 1 of 3



California Licensed Structural Engineer Responsible for the Engineering and Test Report(s)								
Company Name:The VMC Group								
Name: Mr. Ken Tarlow California License Number: SE2851								
Mailing Address:113 Main Street, Bloomingdale NJ, 07403								
Telephone: 973-838-1780 Email: ken.tarlow@thevmcgroup.com								
Supports and Attachments Preapproval								
 Supports and attachments are preapproved under OPM- (Separate application for OSHPD Preapproval of Manufacturer's Certification (OPM) of Supports and attachments is required) Supports and attachments are not preapproved 								
Certification Method								
 Testing in accordance with: ICC-ES AC156 Other (Please Specify): 								
Testing Laboratory								
Company Name: UC Berkeley								
Contact Name: Wes Neighbour								
Mailing Address: 1301 South 46 th St, Richmond CA 94804								
Telephone: 510-665-3414 Email: wdn@berkeley.edu								

"Access to Safe. Quality Healthcare Environments that Meet California's Diverse and Dynamic Needs"

osDpd



OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT FACILITIES DEVELOPMENT DIVISION

Seismic Parameters
Design in accordance with ASCE 7-10 Chapter 13: 🛛 Yes 🗌 No
Design Basis of Equipment or Components $(F_p/W_p) = 3.33g$
S_{DS} (Design spectral response acceleration at short period, g) = _1.85
a_p (In-structure equipment or component amplification factor) = _2.5
R_p (Equipment or component response modification factor) = _2.5
Ω_0 (System overstrength factor) = _2.5
I_p (Importance factor) = 1.5
z/h (Height factor ratio) = <u>1.0</u>
Equipment or Component Natural Frequencies (Hz) = <u>See Attached</u>
Overall dimensions and weight (or range thereof) = <u>See Attached</u>
Equipment or Components @ grade designed in accordance with ASCE 7-10 Chapter 15: 🗌 Yes 🛛 No
Design Basis of Equipment or Components (V/W) =
S _{DS} (Design spectral response acceleration at short period, g) =
S _{D1} (Design spectral response acceleration at 1 second period, g) =
R (Response modification coefficient) =
Ω_0 (System overstrength factor) =
C _d (Deflection amplification factor) =
I_p (Importance factor) = 1.5
Height to Center of Gravity above base =
Equipment or Component Natural Frequencies (Hz) =
Overall dimensions and weight (or range thereof) =
Tank(s) designed in accordance with ASME BPVC, 2010: 🗌 Yes 🛛 No
List of Attachments Supporting Special Seismic Certification
🖂 Test Report(s) 🛛 Drawings 🗌 Calculations 🖾 Manufacturer's Catalog
Other(s) (Please Specify): Product & Sub-Component Matrices
OSHPD Approval (For Office Use Only) – Approval Expires on December 31, 2019
Signature: Date: December 12, 2013
Print Name: Timothy J. Piland Title: SSE
Special Seismic Certification Valid Up to : $S_{DS}(g) = 1.85$ $z/h = 1.0$
Condition of Approval (if applicable):
"Access to Safe, Quality Healthcare Environments that Meet California's Diverse and Dynamic Needs"

"Access to Safe. Quality Healthcare Environments that Meet California's Diverse and Dynamic Needs" STATE OF CALIFORNIA – HEALTH AND HUMAN SERVICES AGENCY OSH-FD-759 (REV 1/24/13)

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Certified Product Table

Trane CSAA Air Handlers (Performance Climate Changer)

Table 1: Model Size

Model Number	Unit Size	Max Height	Max Width	Max Module Length	Max Module Weight	Module Types	UUT	MFR
	003	29.00	32.00	52.25	395	Fan Section	1, 2	
	004	29.00	44.00	52.25		Air Mixing Section	Interpolated	
	006	35.25	44.00	52.25	627	Air Blender Section	Interpolated	
	008	37.75	51.00	52.25	684	Filter Section	Interpolated	
	010	37.75	62.00	54.50	883	Coil Section	Interpolated	
CSAA	012	41.50	67.00	57.50	927	UV Systems Section	5	Trane
	014	41.50	72.00	57.50	1080	Diffuser Section	Interpolated	
	017	49.00	72.00	57.50	1244	Access Section	Interpolated	
	021	52.75	80.00	55.50	1460	Control Section	Interpolated	
	025	61.50	80.00	56.50	1735	Discharge Plenum Section	Interpolated	
	030	61.50	94.00	57.50	1989	Humidifier Section	3, 4	

Overall unit length is variable depending on the installed modules

Units are certified for "inline" applications only.

Units are limited to be installed with maximum 79" rod spacing and 30" maximum rod length from fixed support. Stacked units are not a part of this pre-approval.

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Certified Product Table

Trane CSAA Air Handlers (Performance Climate Changer)

Table 2: Base Frame Construction

Use	Base Construction	Baserail Height	Material	Section	UUT	MFR
Indoor	Bolted Baserails	2.5	14 ga Galv CS	Cold Formed	1, 2, 3, 4, 5	Trane

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Certified Product Table

Trane CSAA Air Handlers (Performance Climate Changer)

Table 3a: Enclosure Construction, Wall/ Roof Exterior Panels

Skin	Insulation	Panel Nominal Thickness	Wall/Roof Panel Material	Wall/Roof Panel Thickness	Wall/Roof Panel Type	UUT	MFR
Outer	Interstitial Foam	2"	Galv CS	22 ga	Solid	1, 2, 3, 4, 5	Trane

Table 3b: Enclosure Construction, Wall/ Roof Interior Panels

Skin	Insulation	Panel Nominal Thickness	Wall/Roof Panel Material	Wall/Roof Panel Thickness	Wall/Roof Panel Type	UUT	MFR
Inner	Interstitial Foam	2"	Galv CS	22 ga	Solid	1, 5	
Inner	Interstitial Foam	2"	Galv CS	22 ga	Perforated	3	Trane
Inner	Interstitial Foam	2"	Stainless Steel	22 ga	Solid	2	Traffe
Inner	Interstitial Foam	2"	Stainless Steel	22 ga	Perforated	4	



Certified Product Subcomponent Table

Table 4a: Hydronic Coils									
Dimer			Width	(inches) Single	e Stack		UUT	MFR	
Dimer	ISIONS	27.50		62.50		89.50	001	WIFR	
	22.50	Х	Х	Х	X	Х	1		
ss) µt		Х	X	Х	X	Х	Interpolated		
in all	35.00	Х	Х	Х	Х	Х	5	Trane	
Height (inches)		Х	Х	Х	X	Х	Interpolated		
	55.00	Х	X	X	X	Х	4		

Table 4b: Hydronic Coil Options

Variable	Options	UUT	MFR
Vallable	Stainless Steel	1,5	IVIT IN
Casing Material:			
	Galv Steel Casting	4	
Tube Material:	Copper	1, 4, 5	
Tube Outer Diameter:	1/2"	1, 5	
Tube Outer Diameter.	5/8"	4	
	0.016"	1, 5	
Tube Wall Thickness:		Interpolated	
	0.035"	4	
Permitted Fin Material:	Aluminum	1, 5	
Permitted Fin Material:	Copper	4	
	6	Extrapolated	Trane
		Extrapolated	Traffe
Permitted Fin Pitch:	10	5	
		Interpolated	
	14	1, 4	
	1	Extrapolated	
	2	1	
Permitted Tube Rows:		Interpolated	
	6	5	
	8	4	
Header Type:	Hydronic	1, 4, 5	
Header Material:	Copper	1, 4, 5	

Table 4c: Refrigerant Coils

Dimensions		Width (inches) Single Stack			UUT	MFR		
	Dimensions		27.50		89.50	001	IVIER	
	loight	22.50	Х	Х	Х	2		
	leight 1ches)		Х	X	X	Interpolated	Trane	
(11	icnes)	55.00	Y	Y	× ×	3		

Table 4d: Refrigerant Coil Options

Variable	Options	UUT	MFR
Casing Material:	Stainless Steel	2, 3	
Tube Material:	Copper	2, 3	
Tube Outer Diameter:	1/2"	2, 3	
Tube Outer Diameter:	5/8"	Extrapolated	
	0.016"	3]
Tube Wall Thickness:		Interpolated	1
	0.025"	2	
Permitted Fin Material:	Aluminum	2, 3	
	6	2	Trane
Permitted Fin Pitch:		Interpolated	Tranc
	14	3	
	1	Extrapolated	
		Extrapolated	
Permitted Tube Rows:	4	2	
		Interpolated	
	8	3	
Header Type:	DX Header	2 ,3	
Header Material:	Copper	2, 3	1

Table 4e - Steam Coils

Dimension	Width (inches) Single Stack 27.50		UUT	MFR	
Height (inches)	22.50		х	1, 2	Trane
Table 4f - Steam Coil	Options				
Variable	Optio	ns	UUT	MFR	
Casing Material:	Stainless	Steel	2		
Casing Material.	Galv Steel Casting		1		
Tube Material:	Copp	Copper			
Tube Outer Diameter:	1"		1, 2		
Tube Wall Thickness:	0.03	1"	1, 2		
Permitted Fin Material:	Aluminum		1		
Fermitted Fin Material:	Copper		2	Trane	
	6		1		
Permitted Fin Pitch:			Interpolated		
	11		2		
Permitted Tube Rows:	1		1, 2		
Header Type:	Stea	m	1, 2		
Header Material:	Ductile Iron	Casting	1, 2		



Table 5: Variable Frequency Drives

Model	Power Rating	Voltag	e Rating	Max Weight	UUT	MFR
	[hp]	208 VAC	460 VAC	[lbs]		
	1.5	Х	Х	123	2	
TR150		Х	Х		Interpolated	Danfoss
	40	Х	Х	325	4	
	1	Х	Х	123	1	
		Х	Х		Interpolated	
TR200	7.5	Х	Х	136	5	Danfoss
		Х	Х		Interpolated	
	40	Х	Х	325	4	

Table 6: Motor Starters

Model	Power Rating [hp]	0	e Rating	Max Weight [lbs]	UUT	MFR
	[iib]	208 VAC	460 VAC	[ibs]		
X13180863050	1	Х	Х	65	1	
X13180863· · ·		Х	Х		Interpolated	Benshaw
X13180863400	40	Х	Х	97	3	

Table 7: Full System Controllers

Model	UUT	MFR
MP580	1, 3	Trane
UC600	2, 4	rrane

Table 8: Plenum Fan, Direct Drive, Horizontal Shaft, Aluminum Wheel

Dimer				Powe	r Rating				Rating	UUT	MF	R
Dimer	ISIONS	Motor HP	Motor HP 0.75 · · · 1.5 · · · 20 (All Dual Rated)									
		Weight	24		96		481	208 VAC	460 VAC		Fan	Motor
		10.5"	Х	Х	Х	Х	X	Х	X	2		
	Single AF		Х	Х	Х	Х	Х	Х	X	Interpolated		
Blade		24.5"	Х	Х	Х	Х	X	Х	X	Interpolated	Lau	Baldor
Diameter		20"	Х	Х	Х	Х	X	Х	X	Interpolated	Lau	Daluul
	Double AF		Х	Х	Х	Х	X	Х	X	Interpolated		
		24.5"	Х	X	Х	Х	Х	Х	Х	3		

Table 9: Plenum Fan, Belt Drive, Horizontal Shaft, Galv CS Wheel

Dimer	nsions	Power Rating								e Rating Il Rated)	UUT	MF	R
Dimer	1310113	Motor HP	0.75		1	5		40		in Nateu)	001		
		Weight	24		56	185		578	208 VAC	460 VAC		Fan	Motor
	Single BC	10"	Х	X	X	X	X	Х	Х	Х	1	Comefri	AOSmith
	Single BC	11"	Х	X	Х	Х	X	Х	Х	Х	Extrapolated		
Blade		12"	Х	Х	Х	Х	Х	Х	Х	Х	Extrapolated		
Diameter		18"	Х	X	Х	Х	Х	Х	Х	Х	5	Comefri	Baldor
	Single AF		Х	X	Х	X	X	Х	Х	Х	Interpolated		
		32"	Х	Х	Х	Х	X	Х	X	Х	4		

UUT5 has a Single FC type blade. Plenum Fans and Housed Fans have similar structural configurations. Motor mounting configuration is the same for both fans.

Table 10: Housed Fan, Belt Drive, Horizontal Shaft, Galv Carbon & Corten Steel Wheel

Dime					Power	Rating				Voltage Rating (All Dual Rated)			М	FR
Dimer	nsions	Motor HP	0.75		1		5		40	(All Du	al Rated)	UUT		
		Weight	24		56		185		578	208 VAC	460 VAC		Fan	Motor
		9-4"	Х	Х	Х	Х	Х	X	X	Х	Х	1	Comefri	AOSmith
		9-6"	Х	Х	Х	Х	Х	Х	Х	Х	Х	Extrapolated		
		9"	Х	Х	Х	Х	Х	X	X	Х	Х	Extrapolated		
	Single FC	10"	Х	Х	Х	Х	Х	X	X	Х	Х	Extrapolated		
	Single I C		Х	Х	Х	Х	Х	X	X	Х	Х	Extrapolated		
Blade		18"	Х	Х	Х	Х	Х	Х	Х	Х	Х	5		
Diameter			Х	Х	Х	Х	Х	X	X	Х	Х	Interpolated	Comefri	Baldor
Diameter		25"	Х	Х	Х	Х	Х	X	X	Х	Х	Interpolated	Comen	Daluul
	Single BC	9"	Х	Х	Х	Х	Х	X	X	Х	Х	Interpolated		
	Silligie BC	10"	Х	Х	Х	Х	Х	Х	Х	Х	Х	Interpolated		
I		12"	Х	Х	Х	Х	Х	Х	Х	Х	Х	Interpolated		
	Single AF		Х	Х	Х	Х	Х	X	Х	Х	Х	Interpolated		
		25"	Х	X	Х	Х	Х	X	Х	Х	Х	3		

UUT's 1 & 5 were tested with Galv CS, UUT3 was tested with Corten Steel

Table 11: Parallel Blade Dampers

Dimer	nsions					Width (inches)	1				UUT	MF	R
		13.25		16.25		55.5		66.25		71		Damper	Actuator
	13.97	Х	X	X	Х	Х	X	X	X	Х	Extrapolated		
$\widehat{}$		Х	Х	X	Х	Х	X	X	X	Х	Extrapolated		
Ē	17	Х	Х	Х	Х	Х	Х	X	X	Х	1, 2, 5	Ruskin	Belimo
ьt		Х	Х	Х	Х	Х	Х	X	X	Х	Interpolated	CD60 Series	AF Series
eid	23.5	Х	X	X	Х	Х	Х	Х	Х	Х	3	CD60 Series	AF Series
Ť		Х	X	X	Х	Х	X	X	X	Х	Interpolated		
	28.5	Х	X	X	Х	Х	X	X	X	Х	3, 4		

Dimensions are of nominal component size

All dampers are galvanized CS

UUT1 uses 35 in*lb Belimo actuator, UUT3 , 4, and 5 use 133 in*lb Belimo actuators (all 24VAC)



Table 12: Traq Dampers

Dimer	sions	Dia	ameter (inche	es)	UUT	М	FR]
Dimer	1510115	13.00		24.00	001	Damper	Actuator	
Size	003	Х	Х	Х	2	Trane	Deline	All dampe
		х	Х	X	Interpolated	Traq	Belimo AF Series	All actuate
Unit	030	х	Х	Х	4	Series	Ai Ociles	UUT 2 & 4

All dampers are galvanized CS All actuators are 24VAC UUT 2 & 4 use 133 in*lb Belimo actuators

Table 13: General Purpose Transformer

	Power	Volta	ge		Frequency		
Model	Fower	Input	Output	Phase	Frequency	UUT	MFG
	KVA	VAC	VAC		Hz		
3S1F	3	240 or 480	120 or 240	1	60	1, 4	Square D

Table 14: TCACS Filter (Catalytic)

Dimer	sione	Le	ength (inches)	Voltage	Phase	Frequency	UUT	MFR
Diffici	1310113	21.00		62.00	VAC	1 11830	Hz	001	WILLY.
	12.00	Х	X	X				4	
s) II		Х	Х	Х				Interpolated	
eight ches)	20.00	1, 4	Х	Х	120	1	60	1, 4	Genesis Air
ĔĽ		Х	Х	Х				Extrapolated	
_	24.00	Х	Х	Х				Extrapolated	

UUT 1 used (1) 20"H x 21"L TCACS

UUT 4 used (1) 12"H x 21"L, (1) 12"H x 62"L, (2) 20"H x 21"L, (2) 20"H x 62"L TCACS

All constructed with Galv Carbon Steel (18GA)

Table 15: UV Lights

Model	Voltage	Phase	Frequency	UUT	MFG	Ī
	VAC		Hz			
Standard UV Light	120	1	60	1, 4	Ultraviolet Devices	Frame made from Galvanized CS

Table 16: Filter Rack

	Filter R	ack Type				Size			UUT	MFG
Load Access	Ang	le Туре	Holds Filter Type	003		012		030		
		2"		Х	X	X	X	Х	2, 5	
bu		4"		Х	Х	Х	X	Х	Interpolated	
Side Loading	Flat	CME 2"/ 4" C		х	х	х	x	х	4	
e		Bag/ Cartri	dge (BC)	X	Х	Х	Х	Х	1, 2	
Ši	Angled	2"		Х	Х	Х	Х	Х	1	Qualex
	Angled	4"		Х	Х	Х	Х	Х	3	Qualex
		2"		X	Х	Х	X	Х	1	
ng H		4"	4"		Х	Х	Х	Х	Interpolated	
Front .oading	Flat	Bag	Bag (B)		Х	Х	Х	Х	2	
щ	-	Catridg		Х	Х	Х	X	Х	3	
_		HEF	PA	Х	Х	Х	X	Х	4	

All filters racks are made from Galvanized CS

Table 17: Filter Media

	Filter M	edia Type				Size			UUT	UUT
Filter Size	Filte	er Type	MERV Rating	003		012		030		
	Perr	manent	2	Х	Х	Х	X	X	1, 2	
2"	Thro	waway	5	Х	Х	Х	X	Х	2, 4	
2	Pleated	Coated	7	Х	Х	Х	X	X	Interpolated	
	Fleateu	Regular	8	Х	Х	Х	Х	Х	1, 4, 5	
	Pleated	Coated	7	Х	Х	Х	X	Х	3	
	Fleateu	Regular	8	Х	Х	Х	X	Х	2, 3, 4	
4"	High	65%	11	Х	Х	Х	X	Х	3	
	Efficiency	85%	12	Х	Х	Х	X	X	Interpolated	
	Linciency	95%	14	Х	Х	Х	X	Х	4	Airguard
		65%	11	Х	Х	Х	X	Х	3	Industries
12"	Cartridge	85%	12	Х	Х	Х	X	X	Interpolated	muusines
	_	95%	14	Х	Х	Х	X	X	1	
		65%	12	Х	Х	Х	X	X	2	
18"	Short Bag	85%	13	Х	Х	Х	X	X	Interpolated	
		95%	14	Х	Х	Х	X	X	Interpolated	
		65%	12	Х	Х	Х	Х	Х	Interpolated	
30"	Long Bag	85%	13	Х	Х	Х	X	X	1	
	_	95%	14	Х	Х	Х	X	X	1	
-	HEPA	99.97%	17	Х	Х	Х	X	Х	4	



Table 18: Inlets/ Outlet Openings

Dimensions			Height (inches)									
		7		19		25		41		49		
	10	1	Х	Х	Х	Х	Х	X	Х	Х	1	
es		Х	X	X	X	Х	X	X	X	Х	Interpolated	
당	22	Х	Х	5	Х	Х	X	X	X	Х	5	
(i)		Х	Х	Х	X	Х	Х	Х	Х	Х	Interpolated	Trane
ţţ	28	Х	Х	Х	Х	2	Х	Х	Х	Х	2	
Nic		Х	Х	X	X	Х	X	X	X	Х	Interpolated	
_	30	Х	Х	X	Х	Х	X	3	Х	3	3	

Table 19: Access Doors

Dimer	nsions				Height (inches)			UUT	MFR	
		22		35		52		55			
	10	1, 2	Х	5	Х	Х	X	4	1, 2, 4, 5		
		Х	Х	Х	Х	Х	X	X	Interpolated		
	14	1, 2	Х	Х	Х	Х	Х	Х	1, 2		
	15	Х	Х	Х	X	Х	X	4	4		
		Х	Х	Х	X	Х	X	X	Interpolated		
	17	Х	Х	5	Х	Х	X	X	5		
	18	Х	Х	Х	X	3, 4	Х	X	3, 4		
(in.)	19	Х	Х	5	Х	Х	Х	3	3, 5		
Width (20	1, 2	Х	Х	Х	Х	Х	4	1,2, 4	Trane	
Vidt		Х	Х	Х	Х	Х	Х	Х	Interpolated		
5	22	Х	Х	Х	Х	Х	Х	4	4		
		Х	Х	Х	X	Х	X	X	Interpolated		
	27	Х	Х	Х	Х	Х	Х	3	3		
		Х	Х	Х	Х	Х	Х	Х	Interpolated		
	29	1, 2	Х	Х	Х	Х	Х	Х	1, 2		
		Х	Х	Х	Х	Х	Х	Х	Interpolated		
	31	Х	Х	Х	Х	Х	Х	3	3		

All access doors are 2" thick double wall construction

Table 20: Miscellaneous Components

Component	Availablity	UUT	MFG
Humidifier	All Sizes	2	Armstrong Humidipak
Air Blender	All Sizes	1	Trane
Diffuser	All Sizes	3	Trane
Silencer	All Sizes	2	Trane
Attenuation Panel (Perforated)	All Sizes	3	Trane
Marine Lights	All Sizes	1, 2, 3, 4	Trane
Light Switch and Receptical	All Sizes	2, 4	Trane



			UU	Γ #1					
Manufacturer: Ingerso									
Model Series: CSAA Series Construction	Size 003 (Performance Summary:	Climate Ch	anger)						
								Installation	
Enclosure C	Construction	Ва	ase Constructi	on	Moc	lules	Method		
Inner Panel - Galv C	CS 22ga Solid Panel CS 22ga Solid Panel terstitial Foam ss - 2" Nominal		sembled (Bolt 14ga Galv CS ase Height 2.t	CS Coll Se		Section ection ection 86-3/ t Section 5/8		Suspended Isolated 8" Max Rod Spacing " Dia. Typical Rod	
Configuration Summ	ary:	•					•		
Hydronic Coil (CW/HW Water Coils)	Steam Coil (NFS Coils)		m Fan Drive	House Belt	ed Fan Drive	Motor	Starter	Starter VFD	
Trane SST Casing Alum Fin 14 fpi 2 Row Copper Tube 1/2" dia 0.016 wall Hydronic Header	Trane Galv Steel Casing Alum Fin 6 fpi 1 Row Copper Tube 1" dia 0.031 wall Steam Header	10" BC S 1HP, 2 AOSmi	nefri single Fan 08VAC th Motor S Wheel	9-4" FC S 1HP, 2 AOSmit	nefri Single Fan 08VAC Sh Motor S Wheel	1HP, 2	shaw 08VAC 0863050	Danfoss 1HP, 208VAC TR200	Trane MP580
Filter Racks	Filter Media	UV Light Array	Modular Transformer	Dam	ipers	Damper	Actuators	TCACS	Other Sections
Bag/Cartridge Flat Side Load 2" Angled Side Load 2" Flat Front Load	2" Permanent 2" Pleated 12" Cartridge 30" Long Bag	UV Devices, Inc. 120VAC, 0.5A	Square D 480/120VAC, 3KVA Model 3S1F	CD 60 Galv CS	skin Series S Blades V x 17"H	AF 24-M 24\	Belimo AF 24-MFT Series 24VAC, 35 in.lb.		Blender Mixing Box
Component Summar	y:								
				Dimer				Natural Fre	· · ·
	Item		Length (in)	Width (in)	Height (in)	Weight (Ib)	F-B (Hz)	S-S (Hz)	V (Hz)
CSAA Size 003 Enclos	sure Corner		275.0	32.0	29.0	2,090	N/A	N/A	N/A
						34.2 psf			
Seismic Test Parame									
	lifiaction Method ES AC156 (2012)		Sds 1.850	z/h 1.0	lp 1.5	Aflx-H 2.96	Arig-H 2.22	Aflx-V 1.23	Arig-V 0.49
	tionality Test Results	:	1.000	1.0	1.0	2.00	<i>L.LL</i>	1.20	0.10
Pre: Functional					-				
	ere full of contents and	maintained	structural in	tegrity and	functional c	ompliance.			
Representative Photo	0:								
			1000		FA		1		
UUT Mounting Descr					(32) 1/2" (2)				
UUT to Trapeze	<i>iption:</i> Bottom Base Clip Top Roof Connection nd Isolation System				(55) 1/4-2	rade 8 Bolts 20 Screws and SB-250 Ca	[

Manufac				00	T #2						
	cturer: Ingersoll Rand - T		Oliverate Ol								
	Series: CSAA Size 003 (P	enormance	Climate Cr	nanger)							
Series C	Construction Summary:							I	Installation		
<u> </u>	Enclosure Construction		Base Co	nstruction		Modules		Installation Method			
	ter Panel - Galv CS 22ga Solic Panel - Stainless Steel 22ga So Insulation - Interstitial Foar Panel Thickness - 2" Nomina	olid Panel 1	Assembled (Bolted) 14ga Galv CS Base Height 2.5"		Mixing Box Section Filter Section Coil Section, Fan Section Control Section Humidifier Section Silencer Section			Suspended Isolated 91-1/8" Max Rod Sp 5/8" Dia. Typical F			
Configu	ration Summary:									Damage	
	Refrigerant Coil (DX Coils)		n Coil Coils)		m Fan t Drive	Variable Fre	quency Drive	Dan	npers	Damper Actuators	
1/2"	Trane SST Casing Alum Fin 6 fpi 4 Row Copper Tube dia 0.025 wall DX Header	Copper 1 Row Co 1" dia 0	ST Casing Fin 11 fpi pper Tube .031 wall Header	10.5" AF \$ 1.5HP, Baldor	au Single Fan 208VAC r Motor Wheel	1.5HP,	nfoss 208VAC Series	Trane Traq Series	Ruskin CD 60 Series	Belimo AF 24-MFT	
	Filter Racks	Filter	Media	Other S	Sections	Cont	roller	Galv CS Blades	Galv CS Blades 16.25"W x 17"H	Series 24VAC,	
Bag	2" Flat Side Load g/Cartridge Flat Side Load Bag Flat Front Load	2" Thro 4" Pl	manent owaway eated ort Bag	Hum	ncer idifier g Box		ane 600	13" Diameter		35 in.lb.	
Compor	nent Summary:					8					
						nsions			Natural Fre		
	Item			Length (in)	Width (in)	Height (in)	Weight (Ib)	F-B (Hz)	S-S (Hz)	V (Hz)	
CSAA Si	ize 003 Enclosure Corner			230.0	32.0	29.0	1,680	N/Á	N/Á	N/Á	
							32.9 psf				
Seismic	Test Parameters:								-		
Qualifiaction Method											
				Sds	z/h	lp 1.5	Aflx-H	Arig-H	Aflx-V	Arig-V	
Pro/Pos	ICC-ES AC156 (2012)		Sds 1.850	z/h 1.0	lp 1.5	Aflx-H 2.96	Arig-H 2.22	Aflx-V 1.23	Arig-V 0.49	
	ICC-ES AC156 (t Shake Functionality Te	2012)	:							-	
Pre:	ICC-ES AC156 (t Shake Functionality Te Functional Pass	2012) est Results		1.850	1.0	1.5	2.96			-	
Pre: Post:	ICC-ES AC156 (t Shake Functionality Te	2012) est Results		1.850	1.0	1.5	2.96			-	
Pre: Post:	ICC-ES AC156 (t Shake Functionality Te Functional Pass All units were full of co	2012) est Results		1.850	1.0	1.5	2.96			-	
Pre: Post: Represe	ICC-ES AC156 (t Shake Functionality Te Functional Pass All units were full of co entative Photo:	2012) est Results ntents and		1.850	1.0	1.5 functional c	2.96			-	
Pre: Post: Represe	ICC-ES AC156 (t Shake Functionality Te Functional Pass All units were full of co entative Photo:	2012) est Results ntents and		1.850	1.0	1.5 functional c	2.96			-	

				UU	T #3						
		ll Rand - Trane Size 030 (Performance	Climate Ch	anger)							
Series Constru		1 1		langer							
		onstruction	Base Co	nstruction		Modules			Installation Method		
Inner Panel - G Insula	Galv CS 2 ation - Inte	S 22ga Solid Panel 22ga Perforated Panel erstitial Foam s - 2" Nominal	Assembled (Bolted) 14ga Galv CS Base Height 2.5"		Mixing Box Secti Filter Section Coil Section, Fan Se Access or Blank Se Diffuser Sectior Discharge Plenum S		n Su Section Section 84" Ma: on 3/4" Di		Suspended Isolated Max Rod Spacing Dia. Typical Rod		
Configuration	Summa	ary:									
Refrigerant Co (DX Coils)	oil	Plenum Fan Direct Drive		ed Fan Drive	Motor Starter	Controller		Dam	pers		
Trane SST Casing Alum Fin 14 fj 8 Row Copper T 1/2" dia 0.016 v DX Header	fpi Tube wall	Lau 24.5" AF Double Fan 20HP, 460VAC Baldor Motor Alum Wheels	25" AF S 40HP, 4 Baldor	nefri ingle Fan 460VAC r Motor eel Wheel	Benshaw 40HP, 460VAC X1318086340 0	Trane MP580	Rus CD 60 Galv CS 66.25"W	Series CD 60 Serie Blades Galv CS Blad		Series Blades	
Filter Racks	6	Filter Media	Other S	Sections	Damper	Actuators					
4" Angled Side L Cartridge Flat Fron		4" Coated Pleated 4" Pleated 4" High Efficiency 12" Cartridge	Mixin	user g Box e Plenum	AF 24-MI 24V	limo FT Series /AC, in.lb.					
Component Su	ummary	/:									
					Dimensions				Natural Fre	· · · ·	
	Item			Length (in)	Width (in)	Height (in)	Weight (Ib)	F-B (Hz)	S-S (Hz)	V (Hz)	
CSAA Size 030	Enclos	ure Corner		272.0	94.0	61.5	6,560	N/A	N/A	N/A	
	_						36.9 psf				
Seismic Test P	Paramet								-		
Qualifiaction Method			S do	7/b	In		Aria ⊔		Aria V		
<u></u>	-			Sds 1.850	z/h 1.0	lp 1.5	Aflx-H 2.96	Arig-H 2.22	Aflx-V 1.23	Arig-V 0.49	
Pre/Post Shake	ICC-E	ifiaction Method S AC156 (2012) tionality Test Results	:	Sds 1.850	z/h 1.0	lp 1.5	Aflx-H 2.96	Arig-H 2.22	Aflx-V 1.23	Arig-V 0.49	
Pre: Fund	ICC-E e Funct ctional I	S AC156 (2012) t ionality Test Results Pass		1.850	1.0	1.5	2.96				
Pre: Fund	ICC-E e Funct ctional f units we	S AC156 (2012) t ionality Test Results Pass re full of contents and		1.850	1.0	1.5	2.96			-	
Pre: Fund Post: All u	ICC-E e Funct ctional f units we	S AC156 (2012) t ionality Test Results Pass re full of contents and		1.850	1.0	1.5	2.96			-	
Pre: Fund Post: All u	ICC-E e Funct ctional F units we e Photo	S AC156 (2012) tionality Test Results Pass re full of contents and :		1.850	1.0	1.5 functional c	2.96				
Pre: Fund Post: All u <i>Representative</i>	ICC-E e Funct ctional F units we e Photo	S AC156 (2012) tionality Test Results Pass re full of contents and : :		1.850	1.0	1.5 functional c	2.96				

Manufacturer: Ingerso			UUT	「 # 4					
Model Series: CSAA	oll Rand - Trane Size 030 (Performance	Climate Ch	nanger)						
Series Construction	Summary:								
Enclosure (Construction	Ba	ase Construction	on	Мос	lules	Installation Method		
Outer Panel - Galv (Inner Panel - Stainless St Insulation - In Panel Thicknes	eel 22ga Perforated Panel		sembled (Bolte 14ga Galv CS ase Height 2.5	,	Mixing Box Filter Se Coil Se Fan Se Control S UV Light			Suspended Isolated 8" Max Rod Spacing " Dia. Typical Rod	
Configuration Summ	ary:								
Hydronic Coil (CW/HW Water Coils)	Plenum Fan Belt Drive	Variable Fre	quency Drive		Dan	npers		Damper	Actuators
Trane Galv Steel Casing Copper Fin 14 fpi 8 Row Copper Tube 5/8" dia 0.035 wall Hydronic Header	Comefri 32" AF Single Fan 40HP 480VAC Baldor Motor Galv CS Wheel	Danfoss 40HP, 460VAC TR200 Series	Danfoss 40HP, 460VAC TR150 Series	Traq S Galv CS	ane Series S Blades ameter	CD 60	Blades	AF 24-M 24\	imo FT Series /AC, in.lb.
Filter Racks	Filter Media	Controller	UV Array	TCA	ACS	Modular Ti	ansformer	Other S	Sections
2"/4" Combo Flat Side Load HEPA Flat Front Load	2" Throwaway 2" Pleated 4" Pleated 4" High Efficiency, HEPA	Trane UC600	UV Devices, Inc. 120VAC, 0.5A		sis Air , 120VAC allest Sizes	480/120V	are D /AC, 3KVA Mixing Bc I 3S1F		g Box
Component Summar	y:								
Item			Length (in)	Dimer Width (in)	nsions Height (in)	Weight (Ib)	Lowest F-B (Hz)	Natural Fre S-S (Hz)	equency V (Hz)
CSAA Size 030 Enclos	sure Corner		279.0	94.0	61.5	7,410 40.7 psf	N/A	N/A	N/A
Seismic Test Parame	ters:		1			1011 poi			
	lifiaction Method		Sds	z/h	lp	Aflx-H	Arig-H	Aflx-V	Arig-V
	ES AC156 (2012)		1.850	1.0	1.5	2.96	2.22	1.23	0.49
Due /De - 4 Oli - Lee France									
	tionality Test Results	-							
Pre: Functional	tionality Test Results Pass		structural in	teority and	functional c	ompliance			
Pre: Functional	tionality Test Results Pass ere full of contents and		structural in	tegrity and	functional c	compliance.			
Pre: Functional Post: All units we	tionality Test Results Pass ere full of contents and		structural in	tegrity and	functional of	compliance.			
Pre: Functional Post: All units we Representative Photo	tionality Test Results Pass ere full of contents and o:		structural in	tegrity and					
Pre: Functional Post: All units we Representative Photo	tionality Test Results Pass ere full of contents and o:		structural in	tegrity and	(40) 1/2" G	compliance.			

			UU1	Г # 5					
Manufacturer: Ingers									
Model Series: CSAA		e Climate Ch	nanger)						
Series Construction	Summary:	1							
Enclosure	Construction	Ba	ase Construction	on	Мос	lules	Installation Method		
Inner Panel - Galv (Insulation - In	CS 22ga Solid Panel CS 22ga Solid Panel terstitial Foam ss - 2" Nominal	Assembled (Bolted) 14ga Galv CS Base Height 2.5"			Mixing Box Section Filter Section Coil Section Fan Section		Suspended Isolated 126" Max Rod Spacing 5/8" Dia Rod		acing
Configuration Summ	ary:	!							
Hydronic Coil (CW/HW Water Coils)	Housed Fan Belt Drive	Variable Free	quency Drive Dai		npers	Damper /	Actuators		
Trane SST Casing Alum Fin 10 fpi 6 Row Copper Tube 1/2" dia 0.016 wall Hydronic Header	Comefri 18" FC Single Fan 7.5HP, 460VAC AOSmith Motor Galv CS Wheel	7.5HP, 4	ifoss 460VAC 9 Series	CD 60 Galv CS	skin Series S Blades / x 17"H	Bel AF 24-MF 24V 133	T Series AC,		
Filter Racks	Filter Media	Other S	Sections		· · · · ·				
2" Flat Side Load	2" Pleated	Mixin	g Box						
Component Summar	у:								
					nsions		Lowest	Natural Fre	quency
Item			Length	Width	Height	Weight	F-B	S-S	V
			(in)	(in)	(in)	(lb)	(Hz)	(Hz)	(Hz)
CSAA Size 030 Enclos	sure Corner		106.5	66.5	41.5	1,860	N/A	N/A	N/A
Seismic Test Parame	4a.va.					37.8 psf			
	lifiaction Method		Sds	z/h	Ip	Aflx-H	Arig-H	Aflx-V	Arig-V
	ES AC156 (2012)		2.00	1.0	1.5	2.96	2.22	1.23	0.49
Pre/Post Shake Fund		;							0.10
Pre: Functional									
Post: All units we	ere full of contents and	maintained	structural in	tegrity and	functional c	ompliance.			
Representative Phote	0:								
					20	2 00 14			
UUT Mounting Descr	iption: Bottom Base Clip			((8) 5/8" A-307	Threaded Roo	d		
UUT to Trapeze				((8) 5/8" A-307	Threaded Roo Threaded Roo nd SB-250 Ca	b		