

DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION FACILITIES DEVELOPMENT DIVISION

APPLICATION FOR HCAI SPECIAL SEISMIC CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY

APPLICATION #: OSP-0785

HCAI Special Seismic Certification Preapproval (OSP)

Type: X New

Renewal

Manufacturer Information

Manufacturer: CUSTOM MECHANICAL SYSTEMS, LLC

Manufacturer's Technical Representative: Michael Ball

Mailing Address: 1981 N Broadway Suite 400, Walnut Creek, CA 94596

Telephone: (510) 932-2406

Email: mball@cmscooling.com

Product Information

Product Name: Air Conditioning Units

Product Type: Air Conditioning Units Custom

Product Model Number: CPDXE-23 Custom Air Handling Unit

General Description: Single model custom air handling unit constructed of carbon steel.

Mounting Description: Spring Vibration Isolated, Curb Mounted

Tested Seismic Enhancements: Seismic enhancements made to the test units and/or modifications required to address anomalies during the tests shall be incorporated into the production units.

Applicant Information

Applicant Company Name: Manwill Engineering L	AC
Contact Person: Derek Manwill	BUILDING
Mailing Address: PO Box 1194, Bend, OR 97709	
Telephone: (541) 241-2102	Email: derek@manwillse.com
Title: President	



STATE OF CALIFORNIA – HEALTH AND HUMAN SERVICES AGENCY

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10/19/2023

OSP-0785



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California Licensed Structural Engineer Responsible for the Engineering and Test Report(s)
Company Name: MANWILL ENGINEERING LLC
Name: Derek Manwill California License Number: S6266
Mailing Address: PO Box 1194, Bend, OR 97709
Telephone: (541) 241-2102 Email: derek@manwillse.com
Certification Method
GR-63-Core X ICC-ES AC156 IEEE 344 IEEE 693 NEBS 3
Other (Please Specify):
EOR CODE CO.
Testing Laboratory
Company Name: ENVIRONMENTAL TESTING LABORATORIES, INC. (ETL)
Contact Person: Jeremy Lange
Mailing Address: 11034 Indian Trail, Dallas TX 75229-3513
Telephone: (972) 247-9657 Email: Jeremy@etIdallas.com
O DATE: 10/19/2023
DATE: 10/19/2023
PNI
BUILDING



OSP-0785



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Seismic Parameters

Design Basis of Equipment or Components	(Fp/Wp) = 1.58 (SDS=0.70, z/h=1),	0.84 (SDS	S=1.12, z/h=0)
SDS (Design spectral response accele	eration at short period, g) = $0.70 (z/h)$	=1), 1.12 (z	:/h=0)
ap (Amplification factor) =	2.5		
Rp (Response modification factor) =	2.0		
Ω_0 (System overstrength factor) =	2.0		
lp (Importance factor) =	1.5		
z/h (Height ratio factor) =	1 and 0		
Natural frequencies (Hz) =	See Attachment		
Overall dimensions and weight =	See Attachment	-	
HCAI Approval (For Office Use Only)		12	
Date: 10/19/2023	OSP-0785	Fi	
Name: Mohammad Karim	DV: Malagerer di Manine	Title:	Supervisor, Health Facilities
Special Seismic Certification Valid Up to: St	os (g) = See Above	z/h =	See Above
Condition of Approval (if applicable):	DATE: 10/19/2023		
	PRNIA BUILDING COD	202	



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ATTACHMENT 1: CERTIFIED COMPONENTS

SPECIAL SEISMIC CERTIFICATION

CUSTOM MECHANICAL SYSTEMS, LLC Custom Air Handling Unit

			TABLE 1			
Model Number Custom Air Handling Unit	Di	mensions (i	in)	Max. Wt.	Description / Notes	Basis
	Depth	Width	Height	(lb)	Description / Notes	Dasis
Custom Air Handling Unit						
CPDXE-23	144	94	70	5,200	-	UUT 1,2
Mounting: Spring Vibration Isolate	4	Seismic	$S_{DS} = 0.70g$ for z/h = 1	I _P = 1.5		
mounting. Opining Vibration Isolati		Sub Mounted.			$S_{DS} = 1.12g$ for z/h = 0	ip = 1.5

Product Construction: Roof/walls: 2in panels, 16GA carbon steel exterior skin, 20GA carbon steel interior liner, fiberglass insulation. Base: 12GA formed carbon steel base with vertical lip to attach to side of curb.

Options/Subcomponents: Model number uniquely identifies manufacturer, materials, and configuration of subcomponents. This is a single model with no variations in options or subcomponents allowed. (

IFUL	HCAI
RFL	OSP-0785
	BY: Mohammad Karim
C	DATE: 10/19/2023
P.W	
	WA BUILDING COV





ATTACHMENT 2: UNIT UNDER TEST SUMMARIES

SPECIAL SEISMIC CERTIFICATION

Model nun Unit function	ner: CUSTO nber: CPDXE on: AIR HAN nber: 230081	-23 (001) DLING UNIT	CAL SYSTEM	S, LLC			
Di	imensions (i	n)	Weight	Res	. Freq.	(Hz)	A
Depth	Width	Height	(lb)	F-B	S-S	V	1
144.0	94.0	70.0	5,200	2.5	1.9	4.9	
	iteria: 2022 C atory: Enviro	,	AC156 ng Laboratory	/			
Report: 20	0023TR1.0 (d	ated 10-11-23	B), tested on 1	0-6-23			
S _{DS} (g)	z/h	A _{FLX-H} (g)	A _{RIG-H} (g)	A_{FLX-V}	(g) A	_{RIG-V} (g)	
0.70	1	1.12	0.84	0.75		0.30	aland the second
1.12	0	1.12	0.84	0.75	RU	0.30E	
Importance	A Martin						



shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

Mounting:	UUT mounted to 20-in tall Mason spring isolated roof curb (DWG F_547571) with (28) #14 self-tapping screws distributed on long sides only. Roof curb floor mounted to fixture with (12) 5/8-in Grade 8 bolts with square plate washers on long sides only.
Construction:	Roof/walls: 2in panels, 16GA carbon steel exterior skin, 20GA carbon steel interior liner, fiberglass insulation. Base: 12GA formed carbon steel base with vertical lip to attach to side of curb.
Subcomponents:	Punker - Dprime Wheel (4331560006), Domel - AZ Motor (AZ 220-100-P140B-AT0G), OJ - Drive (OJ-DV-3055-NGN7), Multi-Wing - Fan (36.5/12-12/33.5/PPG/5ZR/P-1 28mm/AS, 18/8-8/50/PAG/3HR/JA 1.125/BR), Domel - ZZ Motor (ZZ150070S090CG), Tamco - Control Damper (TC1000-16.0X72.0-SPOF-RH, TC1000-20.0X20.0-SPOF-LH), Tamco - Modulating Damper Actuator (AMB24-SR-T), ABB - ACH580 Drive (ACH580-01-044A-4).
Testing notes:	UUT 1 and UUT 2 are identical. The weight is for the UUT and does not include the curb. The curb required modification to fit the width of the unit, so dimensions were ~1.5in less than shown in the roof curb drawing.

UUT 1





ATTACHMENT 2: UNIT UNDER TEST SUMMARIES

SPECIAL SEISMIC CERTIFICATION

					U	UT 2							
	rer: CUSTC iber: CPDX	M MECHANI E-23 (002)	CAL SYSTEM	S, LLC				- 64				and the second	30
		NDLING UNIT											-
	ber: 23008			Dee	F ree a	(1 1-)	1				1		•
	mensions (Width		Weight	F-B	. Freq. (S-S	(HZ) V	-		11				
Depth 144.0	94.0	Height 70.0	(lb) 5,200	г-в 2.9	2.0	v 5.7					n		5
-		CBC, ICC-ES	-,	2.5	2.0	5.7							
		onmental Test						THE ROOM					
		dated 10-11-2	· ·				2.5	9			N		
S _{DS} (g)	z/h		A _{RIG-H} (g)		g) A _R	_{RIG-V} (g)	-						1
0.70	1	1.12				0.20	Jac M		00		- 1	-	-
1.12	0	1.12	0.84	0.75	RCC	0.30 E	(the second						1
Importance	e Factor, I _P =	= 1.5: Unit was	s full of operat	ing conter	nt during	the	A	1	-	1		- States	-
		naintained stru rement after s			ained fu	Inctional		Real		6	TI	W DI	-
Mounting:		T mounted to long sides onl y.			VVXXAAVVV						0		
Constructio		of/walls: 2in pa med carbon <mark>st</mark>						on steel i	nterior line	er, fibergl	ass insul	ation. Base): 12G
Subcompo		nker - Dprim <mark>e</mark> Iti-Wing - Fan		/ 1 / 1 / 1 / 1 / 1 /		IIII M M	NOT THE				•		3N7),

Testing notes: UUT 1 and UUT 2 are identical. The weight is for the UUT and does not include the curb. The curb required modification to fit the width of the unit, so dimensions were ~1.5in less than shown in the roof curb drawing.

OPNIA BUILDING CODE