APPLICATION FOR HCAI SPECIAL SEISMIC CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY

APPLICATION #: OSP-0900

HCAI Special Seismic Certification Preapproval (OSP)

Type: ☐ New ☒ Renewal

Manufacturer Information

Manufacturer: Smardt

Manufacturer's Technical Representative: James Papadopoli

Mailing Address: 1840 Trans Canada Hwy, Dorval, QC H9P1H7 Canada

Telephone: (514) 426-8989 Email: james.papadopoli@smardt.com

Product Information

Product Name: AeroPure AF Air-Cooled Chillers

Product Model Number(s): See Attachment

Product Category: Chillers

Product Sub-Category: Chillers - Air Cooled

General Description: Oil-free magnetic bearing centrifugal air-cooled chillers with carbon steel construction and fin-and-tube condenser coils with copper or aluminum fins.

Mounting Description: Base Mounted Rigid and Neoprene Vibration Isolated

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 LLC

Contact Person: Derek Manwill

Mailing Address: PO Box 1194, Bend, OR 97709

Telephone: (541) 241-2102 Email: derek@manwillse.com

Title: President

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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 ☒ ICC-ES AC156 ☐ IEEE 344 ☐ IEEE 693 ☐ NEBS 3

☐ Other (Please Specify):

Testing Laboratory

Company Name: UNIVERSITY OF CALIFORNIA, BERKELEY (PEER)

Contact Person: Amarnath Kasalanati

Mailing Address: 325 Davis Hall, Berkeley CA 94720-1729

Telephone: (510) 642-3437 Email: amarnath1@berkeley.edu

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Seismic Parameters

Certified Response Spectral Acceleration Factors:(F_p/W_p)

Horizontal	(A Flx-H), g=	3.20	(A Rig-H), g=	2.15
Vertical	(A Flx-V), g=	1.68	(A Rig-V), g=	0.68

S_{DS} (Design spectral response acceleration at short period, g) = 2.50 @ z/h=0; 2.00 @ z/h=1

Hf (Force amplification height factor) = 1 @ z/h = 0; 3.5 @ z/h = 1

Ru (Structure ductility redution factor) = 1 @ z/h = 0; 1.3 @ z/h = 1

I_p (Importance factor) = 1.5

z/h (Height ratio factor) = 0 and 1

HCAI Approval (For Office Use Only) - Approval Expires on 10/07/2032

Date: 10/7/2026

Name: Mohammad Karim Title: Supervisor, Health Facilities

Condition of Approval (if applicable):

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SMARDT
AeroPure AF Air-Cooled Chillers

TABLE 1

	S_{DS} (g)	z/h	H_f/R_μ	A_{FLX-H}	A_{RIG-H}	A_{FLX-V}	A_{RIG-V}	I_p
Mounting: Base Mounted Rigid and Neoprene Vibration Isolated	2.00	1	3.5/1.3	3.20	2.15	1.68	0.68	1.5
	2.50	0	1.0/1.0					

Product Construction: Carbon steel framing with upgraded seismic construction.
Options/Subcomponents: Cu/Al = copper tubes with aluminum fins; Cu/Cu = copper tubes with copper fins. Hail guard. See Table 2 for the list of allowed subcomponents.
Nomenclature: See Attachment 4 - Nomenclature for model number variants.
Dimensions: Length (Depth) is the base-frame length; Width is the nominal overall width; Height is the nominal overall height.

Model Number	Dimensions (in) Depth	Width	Height	Max. Wt. (lb)	Description / Notes	Basis
AeroPure AF Air-Cooled Chillers						
AF***.1*.F**.04.C*1	118.1	91.0	99.4	7,797	4 fans; 1 compressor; Cu/Al	EXTRAP
AF***.1*.F**.04.U*1	118.1	91.0	99.4	8,946	4 fans; 1 compressor; Cu/Cu	EXTRAP
AF***.1*.F**.06.C*1	165.6	91.0	99.4	9,627	6 fans; 1 compressor; Cu/Al	EXTRAP
AF***.1*.F**.06.U*1	165.6	91.0	99.4	11,350	6 fans; 1 compressor; Cu/Cu	EXTRAP
AF050.2O.F26.08.C31	212.6	91.0	99.4	13,965	8 fans; 2 compressors; Cu/Al; rigid	**UUT 2**
AF***.1*.F**.08.C*1	212.6	91.0	99.4	14,112	8 fans; 1 compressor; Cu/Al	INTERP
AF***.2*.F**.08.C*1	212.6	91.0	99.4	14,112	8 fans; 2 compressors; Cu/Al	INTERP
AF***.1*.F**.08.U*1	212.6	91.0	99.4	16,408	8 fans; 1 compressor; Cu/Cu	INTERP
AF***.2*.F**.08.U*1	212.6	91.0	99.4	16,408	8 fans; 2 compressors; Cu/Cu	INTERP
AF***.2*.F**.10.C*1	259.8	91.0	99.4	15,181	10 fans; 2 compressors; Cu/Al	INTERP
AF***.3*.F**.10.C*1	259.8	91.0	99.4	15,181	10 fans; 3 compressors; Cu/Al	INTERP
AF***.2*.F**.10.U*1	259.8	91.0	99.4	18,052	10 fans; 2 compressors; Cu/Cu	INTERP
AF***.3*.F**.10.U*1	259.8	91.0	99.4	18,052	10 fans; 3 compressors; Cu/Cu	INTERP
AF***.2*.F**.12.C*1	307.1	91.0	99.4	16,069	12 fans; 2 compressors; Cu/Al	INTERP
AF***.3*.F**.12.C*1	307.1	91.0	99.4	16,069	12 fans; 3 compressors; Cu/Al	INTERP
AF***.2*.F**.12.U*1	307.1	91.0	99.4	19,514	12 fans; 2 compressors; Cu/Cu	INTERP
AF***.3*.F**.12.U*1	307.1	91.0	99.4	19,514	12 fans; 3 compressors; Cu/Cu	INTERP
AF***.2*.F**.14.C*1	354.3	91.0	99.4	17,958	14 fans; 2 compressors; Cu/Al	INTERP
AF***.3*.F**.14.C*1	354.3	91.0	99.4	17,958	14 fans; 3 compressors; Cu/Al	INTERP
AF***.2*.F**.14.U*1	354.3	91.0	99.4	21,977	14 fans; 2 compressors; Cu/Cu	INTERP
AF***.3*.F**.14.U*1	354.3	91.0	99.4	21,977	14 fans; 3 compressors; Cu/Cu	INTERP
AF***.2*.F**.16.C*1	401.9	91.0	99.4	20,884	16 fans; 2 compressors; Cu/Al	INTERP
AF***.3*.F**.16.C*1	401.9	91.0	99.4	20,884	16 fans; 3 compressors; Cu/Al	INTERP
AF***.2*.F**.16.U*1	401.9	91.0	99.4	25,477	16 fans; 2 compressors; Cu/Cu	INTERP
AF***.3*.F**.16.U*1	401.9	91.0	99.4	25,477	16 fans; 3 compressors; Cu/Cu	INTERP
AF***.2*.F**.18.C*1	448.8	91.0	99.4	21,646	18 fans; 2 compressors; Cu/Al	INTERP
AF***.3*.F**.18.C*1	448.8	91.0	99.4	21,646	18 fans; 3 compressors; Cu/Al	INTERP
AF***.2*.F**.18.U*1	448.8	91.0	99.4	26,814	18 fans; 2 compressors; Cu/Cu	INTERP
AF***.3*.F**.18.U*1	448.8	91.0	99.4	26,814	18 fans; 3 compressors; Cu/Cu	INTERP

Table 1 continues on the next page.

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SMARDT
AeroPure AF Air-Cooled Chillers

TABLE 1 (continued)

Model Number	Dimensions (in) Depth	Width	Height	Max. Wt. (lb)	Description / Notes	Basis
AeroPure AF Air-Cooled Chillers (continued)						
AF***.2*.F**.20.C*1	496.1	91.0	99.4	22,973	20 fans; 2 compressors; Cu/Al	INTERP
AF***.3*.F**.20.C*1	496.1	91.0	99.4	22,973	20 fans; 3 compressors; Cu/Al	INTERP
AF***.2*.F**.20.U*1	496.1	91.0	99.4	27,670	20 fans; 2 compressors; Cu/Cu	INTERP
AF***.3*.F**.20.U*1	496.1	91.0	99.4	27,670	20 fans; 3 compressors; Cu/Cu	INTERP
AF120.3G.F26.20.C41	496.1	91.0	99.4	27,670	20 fans; 3 compressors; Cu/Cu; neoprene	**UUT 1**

End of Table 1.

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SMARDT
AeroPure AF Air-Cooled Chillers

TABLE 2

	S_{DS} (g)	z/h	H_f/R_μ	A_{FLX-H}	A_{RIG-H}	A_{FLX-V}	A_{RIG-V}	I_p
Mounting: Mounted within component.	2.00	1	3.5/1.3	3.20	2.15	1.68	0.68	1.5
	2.50	0	1.0/1.0					

Construction/Options: Model number uniquely identifies manufacturer, materials, and configuration of subcomponents.

Model Number	Dimensions (in) Depth	Width	Height	Max. Wt. (lb)	Description / Notes	Basis
Type: Evaporator - Mfr: Smardt						
An asterisk (*) in the evaporator model number denotes 2 or 4 passes.						
F18*ABBA	63.0	22.4	44.5	1,323	114 x 3/4-in tubes	EXTRAP
F20*ADBA	63.0	24.4	44.5	1,507	136 x 3/4-in tubes	EXTRAP
F22*AHBA	63.0	26.5	44.5	1,937	174 x 3/4-in tubes	EXTRAP
F18*ABHA	126.0	22.4	44.5	2,002	114 x 3/4-in tubes	EXTRAP
F20*ADHA	126.0	24.4	44.5	2,296	136 x 3/4-in tubes	EXTRAP
F24*AMBA	63.0	28.5	44.5	2,330	210 x 3/4-in tubes	EXTRAP
F18*ABKA	157.5	22.4	44.5	2,501	114 x 3/4-in tubes	EXTRAP
F26*ASBA	63.0	30.7	44.5	2,793	264 x 3/4-in tubes	EXTRAP
F20*ADKA	157.5	24.4	44.5	2,845	136 x 3/4-in tubes	EXTRAP
F22*AHHA	126.0	26.5	44.5	3,034	174 x 3/4-in tubes	EXTRAP
F24*ABHB	126.0	28.5	44.5	3,391	118 x 1-in tubes	EXTRAP
F24*AMHA	126.0	28.5	44.5	3,614	210 x 3/4-in tubes	EXTRAP
F22*AHKA	157.5	26.5	44.5	3,724	174 x 3/4-in tubes	EXTRAP
F24*ABKB	157.5	28.5	44.5	3,759	118 x 1-in tubes	EXTRAP
F26*AEHB	126.0	30.7	44.5	3,938	146 x 1-in tubes	EXTRAP
F26*ASHA	126.0	30.7	44.5	4,132	264 x 3/4-in tubes	EXTRAP
F262ASHA	126.0	30.7	44.5	4,132	264 x 3/4-in tubes	**UUT 2**
F24*AMKA	157.5	28.5	44.5	4,251	210 x 3/4-in tubes	INTERP
F26*AEKB	157.5	30.7	44.5	4,712	146 x 1-in tubes	INTERP
F262AEKB	157.5	30.7	44.5	4,712	146 x 1-in tubes	**UUT 1**
Type: Condenser Coil - Mfr: Zhejiang DunAn International Trading Co., Ltd - Material: Copper tube						
53-0119-01-N	4.7	88.2	54.6	179	Al fin; uncoated; RH	EXTRAP
53-0120-01-N	4.7	88.2	54.6	179	Al fin; uncoated; LH	EXTRAP
53-0119-02-N	4.7	88.2	54.6	182	Al fin; blue epoxy; RH	**UUT 2**
53-0120-02-N	4.7	88.2	54.6	182	Al fin; blue epoxy; LH	**UUT 2**
53-0119-03-N	4.7	88.2	54.6	183	Al fin; e-coat; RH	INTERP
53-0120-03-N	4.7	88.2	54.6	183	Al fin; e-coat; LH	INTERP
53-0119-04-N	4.7	88.2	54.6	455	Cu fin; uncoated; RH	INTERP
53-0120-04-N	4.7	88.2	54.6	455	Cu fin; uncoated; LH	INTERP
53-0119-05-N	4.7	88.2	54.6	459	Cu fin; e-coat; RH	**UUT 1**
53-0120-05-N	4.7	88.2	54.6	459	Cu fin; e-coat; LH	**UUT 1**

Table 2 continues on the next page.

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SMARDT
AeroPure AF Air-Cooled Chillers

TABLE 2 (continued)

Model Number	Dimensions (in) Depth	Width	Height	Max. Wt. (lb)	Description / Notes	Basis
Type: Turbocor Compressor - Mfr: Danfoss						
TGS230	31.0	20.4	19.2	272	Standard lift	EXTRAP
TTS300	31.0	20.4	19.2	272	Standard lift	EXTRAP
TGS310	31.0	20.4	19.2	291	Standard lift	EXTRAP
TTS350	31.0	20.4	19.2	291	Standard lift	EXTRAP
TGS490	31.0	20.4	19.2	291	Standard lift; ST	**UUT 1**
TGS380	31.0	20.4	19.2	293	Standard lift	INTERP
TTS450	31.0	20.4	19.2	293	Standard lift	INTERP
TTH375	36.7	23.2	19.2	361	High lift; ST	INTERP
TGH285	36.7	23.2	19.2	361	High lift	INTERP
TTH375	36.7	23.2	19.2	361	High lift; MT	**UUT 2**
Type: Fan - Mfr: ebm-papst						
W3G910-KV12-03	42.1	42.1	13.3	119	380–480 V; 1,050 rpm	**UUT 1,2**
Type: Transformer - Mfr: Marcus Transformer						
MO7K5S-TB	10.5	9.0	8.0	115		**UUT 1,2**
Type: Heat Exchanger - Mfr: SWEP						
F85Hx70/1P	7.4	4.7	20.7	28	F85; 70 plates	EXTRAP
F85Hx90/1P	7.1	4.7	20.7	34	F85; 90 plates	**UUT 2**
F200THx70/1P	7.2	9.6	20.7	86	F200; 70 plates	**UUT 1**
Type: Hail Guard - Mfr: Smardt						
51-1932	2.0	90.5	46.1	73		**UUT 2**
Type: Line Reactor - Mfr: TCI						
KDRJ1H	9.0	10.9	10.0	75	240 A; 400–480/600 V	**UUT 1,2**
Type: Pump - Mfr: Hy-Save						
809-DS-050-STD-B	18.0	9.4	5.0	20		**UUT 1,2**
Type: Victaulic Flange Adapter - Mfr: Victaulic						
Style 741	1.1	13.5	14.5	17		**UUT 1,2**
Type: Actuator - Mfr: Belimo						
JRBUP-3-T	6.7	12.3	5.2	8.1	Valve; on/off	EXTRAP
PRXUP-3-T-250	8.0	12.1	5.4	13	Valve; on/off; no spring	**UUT 1,2**
PKRXUP-MFT-T	8.0	12.6	7.1	15	Valve; MFT; fail-safe	**UUT 1**
Type: Battery - Mfr: Phoenix Contact						
1274118	4.7	5.3	8.0	13		**UUT 1**
Type: Contactor - Mfr: ABB						
AF09Z-30-10-21	3.0	1.8	3.4	0.7		**UUT 1,2**
AF265-30-11-13	7.1	5.5	8.9	8.6		**UUT 1,2**

Table 2 continues on the next page.

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SMARDT
AeroPure AF Air-Cooled Chillers

TABLE 2 (continued)

Model Number	Dimensions (in) Depth	Width	Height	Max. Wt. (lb)	Description / Notes	Basis
Type: Valve - Mfr: Danfoss						
034G7602	2.0	2.6	5.3	0.7	ETS25C	**UUT 1,2**
034L0025	1.2	4.1	7.0	0.8	KVP22	**UUT 2**
034L0097	1.2	4.1	7.0	0.8	KVR15	**UUT 1,2**
032L1240	4.1	2.0	7.5	2.8	EVR20, 7/8 in	**UUT 1,2**
034G3655	2.5	7.4	5.0	4.5	ETS 250L-S	EXTRAP
034G3659	2.4	9.5	5.9	5.5	ETS 400L-L	**UUT 2**
034G3669	3.0	12.2	5.8	10	ETS 500L-L; 2-5/8 in	INTERP
034G3679	3.4	13.2	6.0	11	ETS 500L-L; 3-1/8 in	**UUT 1**
034G3906	3.0	9.5	5.3	5.2	PTS 18L	**UUT 2**
034G3913	3.0	12.2	5.5	8.2	PTS 27L	**UUT 1**
Type: Thermostat - Mfr: Chromolox						
DTS-HAZ-DC	4.8	6.3	11.4	6.0		**UUT 1,2**
Type: Circuit Breaker (SU201M) - Mfr: ABB						
SU201M: single-pole miniature breakers; C trip curve.						
SU201M-C0.5	2.7	0.7	4.4	0.3	0.5 A	EXTRAP
SU201M-C1	2.7	0.7	4.4	0.3	1 A	EXTRAP
SU201M-C5	2.7	0.7	4.4	0.3	5 A	EXTRAP
SU201M-C20	2.7	0.7	4.4	0.3	20 A	EXTRAP
SU201M-C25	2.7	0.7	4.4	0.3	25 A	EXTRAP
SU201M-C6	2.7	0.7	4.4	0.3	6 A	**UUT 1,2**
SU201M-C30	2.7	0.7	4.4	0.3	30 A	**UUT 1,2**
SU201M-C40	2.7	0.7	4.4	0.3	40 A	**UUT 1,2**
SU201M-C50	2.7	0.7	4.4	0.3	50 A	**UUT 1,2**
SU201M-C60	2.7	0.7	4.4	0.3	60 A	EXTRAP
Type: Circuit Breaker (XT) - Mfr: ABB						
XT: fixed three-pole molded-case breakers and switches.						
XT1HU3125AFF000SMT	5.9	4.1	2.8	2.2	XT1; 125 A; breaker	**UUT 1,2**
XT4HU3250EFF000XXX	6.3	5.5	4.1	4.4	XT4; 250 A; breaker	**UUT 1,2**
XT5HU360BDFF000XXX	7.1	5.5	4.1	5.5	XT5; 600 A; switch	**UUT 2**
XT7HU310DDFF000XXX	7.0	8.3	10.6	21	XT7; 1,000 A; switch	**UUT 1**
XT7HU312EDFF000XXX	7.0	8.3	10.6	21	XT7; 1,200 A; switch	EXTRAP
Type: Valve - Mfr: Sporlan						
39863-0	4.4	2.2	7.3	4.0	30 ft lead	EXTRAP
930035	4.4	2.2	7.3	4.0	10 ft lead	**UUT 1,2**
Type: Power Supply - Mfr: Phoenix Contact						
1252697	5.2	3.5	5.3	2.6	Standard option	**UUT 2**
2904602	4.9	2.8	5.1	2.9	Fast restart option	**UUT 1**

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SMARDT
AeroPure AF Air-Cooled Chillers

TABLE 2 (continued)

Model Number	Dimensions (in) Depth	Width	Height	Max. Wt. (lb)	Description / Notes	Basis
Type: Blanket - Mfr: Power Blanket						
CBCW1113X6G-CAP-A	7.2	15.5	15.5	2.0	A cap	**UUT 1**
CBCW1113X6G-CAP-B	7.8	13.8	13.8	2.0	B cap	**UUT 1**
Type: Flow Switch - Mfr: TACO						
IFSWSBR-1	2.8	3.5	4.7	1.5		**UUT 1**
Type: UPS - Mfr: Phoenix Contact						
2907071	5.2	1.6	5.1	1.1		**UUT 1**
Type: Heater - Mfr: Stego						
03233.9-00	4.7	2.6	3.8	1.1		**UUT 1,2**
Type: Door Switch - Mfr: EXM						
881FLRDS	0.4	2.3	2.4	1.0		**UUT 1,2**
Type: Filter Drier - Mfr: Danfoss						
023Z5006	2.3	2.3	6.5	0.9		**UUT 1,2**
Type: Solenoid Coil - Mfr: Danfoss						
018F4115	2.0	4.0	2.0	0.7	BX120CS; 110/120 VAC	**UUT 1,2**
Type: Gateway - Mfr: Stride						
SGW-MB1524-T	4.2	2.1	5.3	0.7		**UUT 1,2**
Type: Thermostat - Mfr: Peco						
TF115-023	2.5	3.1	6.5	0.7		**UUT 1,2**
Type: Receptacle - Mfr: Hubbell						
GFRST15I	3.1	5.0	2.4	0.6	15 A	**UUT 1,2**
Type: Motor Protector - Mfr: ABB						
MS132-1.0	3.2	1.8	3.5	0.5	0.63-1.0 A setting	EXTRAP
MS132-0.4	3.2	1.8	3.5	0.5	0.25-0.4 A setting	**UUT 1,2**
MS132-1.6	3.2	1.8	3.5	0.6	1.0-1.6 A setting	INTERP
MS132-2.5	3.2	1.8	3.5	0.6	1.6-2.5 A setting	INTERP
MS132-4.0	3.2	1.8	3.5	0.6	2.5-4.0 A setting	INTERP
MS132-6.3	3.2	1.8	3.5	0.6	4.0-6.3 A setting	INTERP
MS132-10	3.2	1.8	3.5	0.6	6.3-10 A setting	**UUT 1,2**
Type: GFCI - Mfr: Weidmuller						
7940102733	2.6	1.0	3.7	0.6		**UUT 1,2**
Type: Flow Switch - Mfr: IFM						
SI5010	2.5	2.0	4.4	0.5		**UUT 1,2**
Type: Gateway - Mfr: MSA Safety						
FPC-N64-2227	2.7	1.1	4.0	0.4		**UUT 1**
Type: Temperature Sensor - Mfr: Carel						
NTC60HP00	0.6	0.2	0.2	0.1	HP; IP67; 105 C max	**UUT 1,2**
NTC060WF00	1.6	0.2	0.2	0.1	WF; IP67; 105 C max	INTERP
NTC060HT41	2.0	0.2	0.2	0.1	HT; IP67; 150 C max	INTERP
NTC060WH01	2.0	0.2	0.2	0.1	WH; IP68; 105 C max	INTERP
NTC120WH01	2.0	0.2	0.2	0.3	WH; IP68; 105 C max	**UUT 1,2**
Type: Valve Driver - Mfr: Danfoss						
080G5035	2.1	2.8	4.3	0.2		**UUT 1,2**

Table 2 continues on the next page.

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SMARDT
AeroPure AF Air-Cooled Chillers

TABLE 2 (continued)

Model Number	Dimensions (in) Depth	Width	Height	Max. Wt. (lb)	Description / Notes	Basis
Type: Relay - Mfr: Wago						
859-302	3.6	0.2	2.2	<0.1	5 VDC; 1 changeover	EXTRAP
857-304	3.2	0.2	3.7	<0.1	24 VDC; 1 changeover	**UUT 1,2**
857-357	3.2	0.2	3.7	<0.1	115 V AC/DC; 1 changeover	INTERP
788-507	2.1	0.6	3.4	<0.1	115 VAC; 1 changeover	INTERP
788-515	3.4	0.6	2.1	<0.1	115 VAC; 2 changeover	INTERP
788-312	2.1	0.6	3.4	0.1	24 VDC; 2 changeover	INTERP
788-516	3.4	0.6	2.1	0.1	230 VAC; 2 changeover	INTERP
788-512	2.1	0.6	3.4	0.1	24 VAC; 2 changeover	INTERP
858-304	2.9	1.2	3.8	0.2	24 VDC; 4 changeover	**UUT 1,2**
Type: Pressure Sensor - Mfr: Sensata						
2CP5-71-46	0.9	0.9	2.0	0.2	0–150 psi	**UUT 1,2**
2CP5-71-50	0.9	0.9	2.0	0.2	0-300 psi	**UUT 1,2**
Type: Pressure Switch - Mfr: Suco						
0134-45803-2-110	1.0	1.0	3.5	0.2	1-10 bar adjustment	EXTRAP
0134-45803-2-112	1.0	1.0	3.5	0.2	1-10 bar adjustment	EXTRAP
0134-45803-2-113	1.0	1.0	3.5	0.2	1-10 bar adjustment	EXTRAP
0134-45803-2-114	1.0	1.0	3.5	0.2	1-10 bar adjustment	EXTRAP
0134-45803-2-115	1.0	1.0	3.5	0.2	1-10 bar adjustment	EXTRAP
0134-45803-2-111	1.0	1.0	3.5	0.2	30/21 psi	**UUT 1**
0134-45903-2-114	1.0	1.0	3.5	0.2	270/200 psi	**UUT 1,2**
Type: Terminal Block - Mfr: TE Connectivity						
1SNL308010R0000	2.0	1.1	2.6	0.2		**UUT 1,2**
Type: Breaker - Mfr: Phoenix Contact						
1135753	0.2	4.2	2.2	0.1		**UUT 1**
Type: Switch - Mfr: ORing						
IES-150B	2.8	1.0	3.7	0.1		**UUT 1,2**
Type: Current Switch - Mfr: Dwyer						
MCS-111001	1.0	2.5	1.7	0.1		**UUT 1,2**

End of Table 2 - Subcomponents. General notes and seismic parameters are shown at the beginning of the table.

REVIEWED FOR CODE COMPLIANCE HCAI OSP-0900 BY: Mohammad Karim DATE: 10/07/2026 CALIFORNIA BUILDING CODE, 2025

UUT 1

Manufacturer: Smardt
Model number: AF120.3G.F26.20.C41
Unit function: Air-Cooled Chiller
Serial number: P4450

Dimensions (in)			Weight	Res. Freq. (Hz)		
Depth	Width	Height	(lb)	F-B	S-S	V
496.1	91.0	99.4	27,670	5.2	3.5	8.3

Code & criteria: 2025 CBC, ICC-ES AC156-24 (2nd Edition)
Test laboratory: UC Berkeley – PEER Lab
Report: 25024TR1.1 (dated 10-5-26), tested on 4-7-26

S_{DS} (g)	z/h	H_f/R_μ	A_{FLX-H}	A_{RIG-H}	A_{FLX-V}	A_{RIG-V}
2.00	1	3.5/1.3	3.20	2.15	1.68	0.68
2.50	0	1.0/1.0				

Importance Factor, I_p = 1.5: Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.



Mounting: Base mounted neoprene vibration isolated. UUT sat on (22) Mason MBSW 4-in x 6-in 60 durometer neoprene pads (3/4-in thick neoprene with 1/4-in steel plate). UUT anchored through pads with (22) 3/4-in Grade 8 bolts with steel washer and Mason HLW neoprene washer between bolt head and base rail.

Construction: Carbon steel framing with upgraded seismic construction. Copper-fin condenser coils.

Subcomponents: Smardt - Evaporator (F262AEKB), Zhejiang DunAn International Trading Co., Ltd - Condenser Coil (53-0119-05-N, 53-0120-05-N), Danfoss - Turbocor Compressor (TGS490), ebm-papst - Fan (W3G910-KV12-03), Marcus Transformer - Transformer (MO7K5S-TB), SWEP - Heat Exchanger (F200THx70/1P), TCI - Line Reactor (KDRJ1H), Hy-Save - Pump (809-DS-050-STD-B), Victaulic - Victaulic Flange Adapter (Style 741), Belimo - Actuator (PRXUP-3-T-250, PKRXUP-MFT-T), Phoenix Contact - Battery (1274118), ABB - Contactor (AF09Z-30-10-21, AF265-30-11-13), Danfoss - Valve (034G7602, 034L0097, 032L1240, 034G3679, 034G3913), Chromolox - Thermostat (DTS-HAZ-DC), ABB - Circuit Breaker (SU201M) (SU201M-C6, SU201M-C30, SU201M-C40, SU201M-C50), ABB - Circuit Breaker (XT) (XT1HU3125AFF000SMT, XT4HU3250EFF000XXX, XT7HU310DDFF000XXX), Sporlan - Valve (930035), Phoenix Contact - Power Supply (2904602), Power Blanket - Blanket (CBCW1113X6G-CAP-A, CBCW1113X6G-CAP-B), TACO - Flow Switch (IFSWSBR-1), Phoenix Contact - UPS (2907071), Stego - Heater (03233.9-00), EXM - Door Switch (881FLRDS), Danfoss - Filter Drier (023Z5006), Danfoss - Solenoid Coil (018F4115), Stride - Gateway (SGW-MB1524-T), Peco - Thermostat (TF115-023), Hubbell - Receptacle (GFRST15I), ABB - Motor Protector (MS132-0.4, MS132-10), Weidmuller - GFCI (7940102733), IFM - Flow Switch (SI5010), MSA Safety - Gateway (FPC-N64-2227), Carel - Temperature Sensor (NTC60HP00, NTC120WH01), Danfoss - Valve Driver (080G5035), Wago - Relay (857-304, 858-304), Sensata - Pressure Sensor (2CP5-71-46, 2CP5-71-50), Suco - Pressure Switch (0134-45803-2-111, 0134-45903-2-114), TE Connectivity - Terminal Block (1SNL308010R0000), Phoenix Contact - Breaker (1135753), ORing - Switch (IES-150B), Dwyer - Current Switch (MCS-111001)

Testing notes: N/A

REVIEWED FOR CODE COMPLIANCE
HCAi
OSP-0900
10/07/2026

UUT 2

Manufacturer: Smardt
Model number: AF050.2O.F26.08.C31
Unit function: Air-Cooled Chiller
Serial number: P4514

Dimensions (in)			Weight	Res. Freq. (Hz)		
Depth	Width	Height	(lb)	F-B	S-S	V
212.6	91.0	99.4	13,965	7.6	5.4	9.7

Code & criteria: 2025 CBC, ICC-ES AC156-24 (2nd Edition)
Test laboratory: UC Berkeley – PEER Lab
Report: 25024TR1.1 (dated 10-5-26), tested on 4-8-26

S_{DS} (g)	z/h	H_f/R_μ	A_{FLX-H}	A_{RIG-H}	A_{FLX-V}	A_{RIG-V}
2.00	1	3.5/1.3	3.20	2.15	1.68	0.68
2.50	0	1.0/1.0				

Importance Factor, I_p = 1.5: Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.



Mounting: Base mounted rigid. UUT sat on (10) 4-in x 6-in steel plates (1/2-in thick) to mimic mounting on steel cross-member supports. UUT anchored with (10) 3/4-in Grade 8 bolts with standard washers.

Construction: Carbon steel framing with upgraded seismic construction. Aluminum-fin condenser coils. Hail guard.

Subcomponents: Smardt - Evaporator (F262ASHA), Zhejiang DunAn International Trading Co., Ltd - Condenser Coil (53-0119-02-N, 53-0120-02-N), Danfoss - Turbocor Compressor (TTH375), ebm-papst - Fan (W3G910-KV12-03), Marcus Transformer - Transformer (MO7K5S-TB), SWEP - Heat Exchanger (F85Hx90/1P), Smardt - Hail Guard (51-1932), TCI - Line Reactor (KDRJ1H), Hy-Save - Pump (809-DS-050-STD-B), Victaulic - Victaulic Flange Adapter (Style 741), Belimo - Actuator (PRXUP-3-T-250), ABB - Contactor (AF09Z-30-10-21, AF265-30-11-13), Danfoss - Valve (034G7602, 034L0025, 034L0097, 032L1240, 034G3659, 034G3906), Chromolox - Thermostat (DTS-HAZ-DC), ABB - Circuit Breaker (SU201M) (SU201M-C6, SU201M-C30, SU201M-C40, SU201M-C50), ABB - Circuit Breaker (XT) (XT1HU3125AFF000SMT, XT4HU3250EFF000XXX, XT5HU360BDFF000XXX), Sporlan - Valve (930035), Phoenix Contact - Power Supply (1252697), Stego - Heater (03233.9-00), EXM - Door Switch (881FLRDS), Danfoss - Filter Drier (023Z5006), Danfoss - Solenoid Coil (018F4115), Stride - Gateway (SGW-MB1524-T), Peco - Thermostat (TF115-023), Hubbell - Receptacle (GFRST15I), ABB - Motor Protector (MS132-0.4, MS132-10), Weidmuller - GFCI (7940102733), IFM - Flow Switch (SI5010), Carel - Temperature Sensor (NTC60HP00, NTC120WH01), Danfoss - Valve Driver (080G5035), Wago - Relay (857-304, 858-304), Sensata - Pressure Sensor (2CP5-71-46, 2CP5-71-50), Suco - Pressure Switch (0134-45903-2-114), TE Connectivity - Terminal Block (1SNL308010R0000), ORing - Switch (IES-150B), Dwyer - Current Switch (MCS-111001)

Testing notes: N/A

REVIEWED FOR CODE COMPLIANCE
OSP-0900
DATE: 10/07/2026
CITY OF SANTA ROSA BUILDING CODE

SMARDT
AeroPure AF Air-Cooled Chillers

AeroPure AF Chiller

Digit:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Sample:	**A**	**F**	**0**	**2**	**0**	**.**	**1**	**F**	**.**	**F**	**1**	**8**	**.**	**0**	**4**	**.**	**C**	**4**	**1**

Digit	Digit Description	Codes	Definitions
1-2	Design series	AF	AeroPure AF air-cooled chiller
3-5	Chiller cooling capacity	020-200	Nominal cooling capacity in kW divided by 10 (200-2,000 kW).
7	Compressor quantity	1-3	Number of compressors per chiller
8	Compressor type	F	TGS230
		P	TGH285
		Q	TGH285-MT
		B	TTS300
		D	TTS300-MT
		A	TGS310
		E	TTS350
		N	TTH375
		O	TTH375-MT
		R	TGS380
		I	TTS450
		G	TGS490
10	Evaporator type	F	Flooded
11-12	Evaporator shell diameter	18-26	Evaporator shell diameter in inches
14-15	Condenser fan count	04-20	Number of condenser fans per chiller
17	Customer specific	C	Customer-specific product with seismic modifications, aluminum fins
		U	Customer-specific product with seismic modifications, copper fins
18	Refrigerant type	1	R134a
		2	R1234ze(E)
		3	R513A
		4	R515b
19	Refrigerant circuits	1	Single refrigerant circuit

FOR REFERENCE ONLY