



DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION
OFFICE OF STATEWIDE HOSPITAL PLANNING AND DEVELOPMENT

**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

Telephone: (514) 426-8989

Email: james.papadopoli@smardt.com

Product Information

Product Name: AeroPure AF Air-Cooled Chillers

Product Model Number(s): AF120.3G.F26.20.S4, AF050.2O.F26.08.S3

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): _____

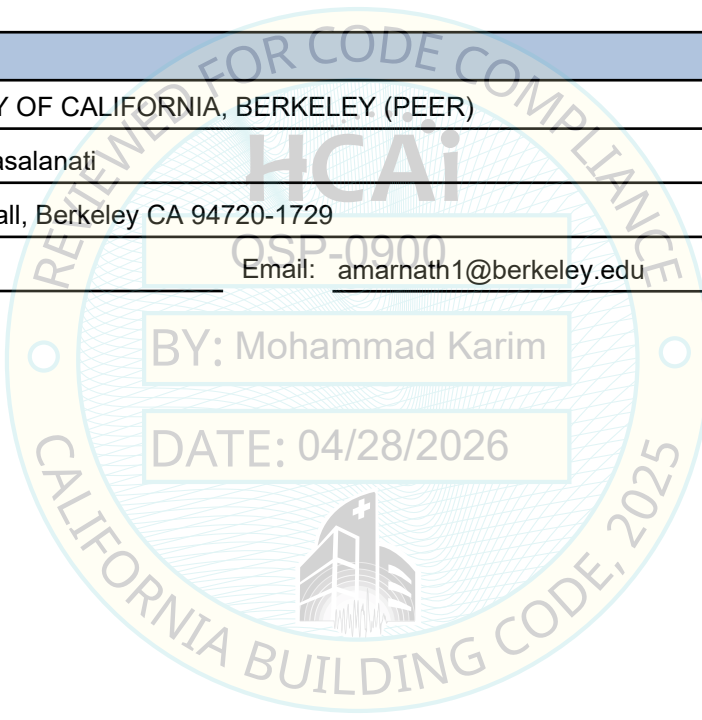
Testing Laboratory

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

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

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

R_u (Structure ductility reduction 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 04/28/2032

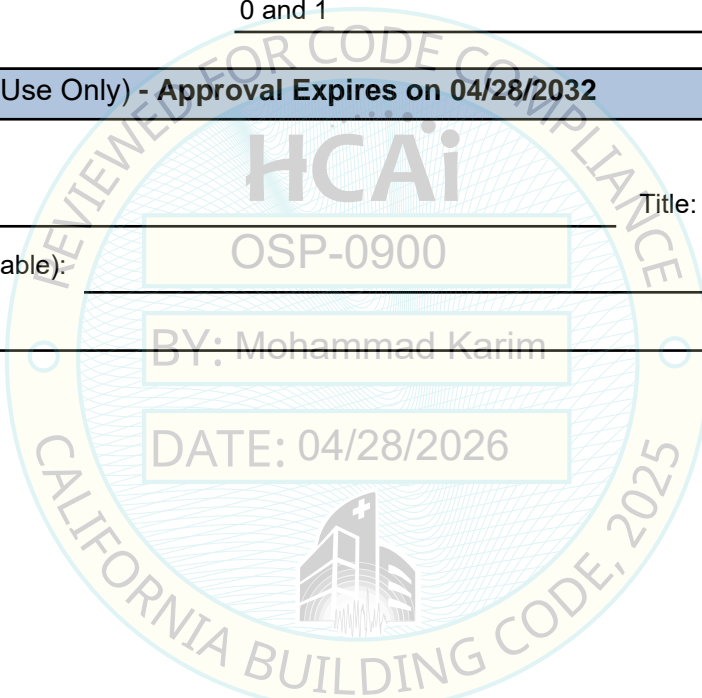
Date: 4/28/2026

Name: Mohammad Karim Title: Supervisor, Health Facilities

Condition of Approval (if applicable): OSP-0900

BY: Mohammad Karim

DATE: 04/28/2026



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AeroPure AF Air-Cooled Chillers

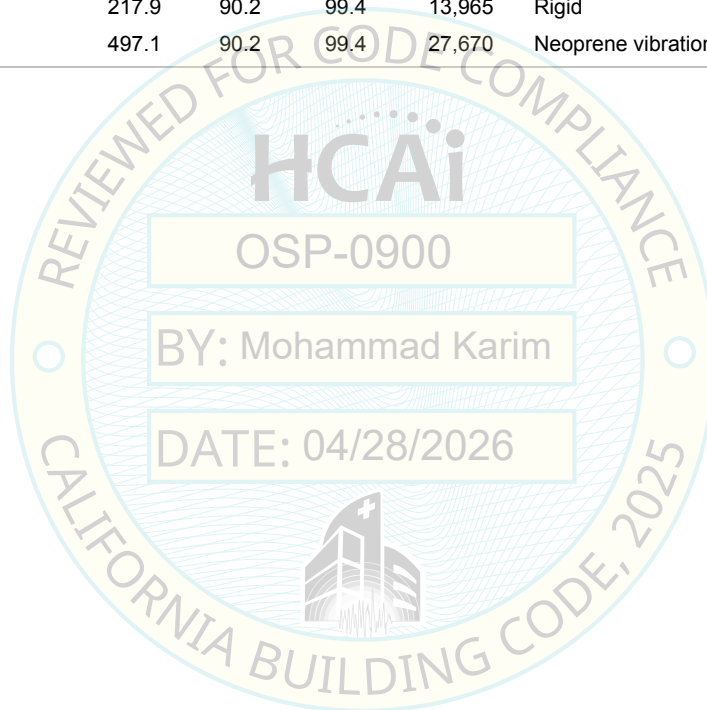
TABLE 1

Mounting	S _{DS} (g)	z/h	H _f /R _μ	A _{fix-h}	A _{rig-h}	A _{fix-v}	A _{rig-v}	I _p
Base Mounted Rigid and Neoprene	2.00	1	3.5/1.3	3.20	2.15	1.68	0.68	1.5
Vibration Isolated	2.50	0	1.0/1.0					

Product Construction: Carbon steel framing with upgraded seismic construction.

Options/Subcomponents: Copper or aluminum-fin condenser coils. Hail guard. See TABLE 2 - SUBCOMPONENTS for list of subcomponents.

Model Number	Dimensions (in)			Max. Wt. (lb)	Description / Notes	Basis
	Depth	Width	Height			
AeroPure AF Air-Cooled Chillers						
AF050.20.F26.08.S3	217.9	90.2	99.4	13,965	Rigid	UUT 2
AF120.3G.F26.20.S4	497.1	90.2	99.4	27,670	Neoprene vibration isolated	UUT 1



SMARTD
AeroPure AF Air-Cooled Chillers

TABLE 2 - SUBCOMPONENTS

	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)			Max. Wt. (lb)	Description / Notes	Basis
	Depth	Width	Height			
Type: Evaporator - Mfr: Smartd						
F262ASHA	126.0	30.7	44.5	4,044		UUT 2
F262AEKB	157.5	30.7	44.5	4,635		UUT 1
Type: Condenser Coil - Mfr: Zhejiang DunAn International Trading Co., Ltd - Material: Copper Fin						
53-0119-05-N	4.7	88.2	54.6	459	Fin-and-tube, copper fin	UUT 1
53-0120-05-N	4.7	88.2	54.6	459	Fin-and-tube, copper fin	UUT 1
Type: Condenser Coil - Mfr: Zhejiang DunAn International Trading Co., Ltd - Material: Aluminum Fin						
53-0119-02-N	4.7	88.2	54.6	183	Fin-and-tube, aluminum fin	UUT 2
53-0120-02-N	4.7	88.2	54.6	183	Fin-and-tube, aluminum fin	UUT 2
Type: Turbocor Compressor - Mfr: Danfoss						
TG490-G-3-ST-SL	31.0	20.4	19.2	290		UUT 1
TTH375-G-1-ST-SL	36.7	23.2	19.2	360		UUT 2
TTH375-G-1-MT-SL	36.7	23.2	19.2	360		UUT 2
Type: Fan - Mfr: EBM-Papst						
W3G910-KU2503	42.1	42.1	10.8	106		UUT 2
W3G910-KV1203	42.1	42.1	13.3	119		UUT 1
Type: Transformer - Mfr: Marcus Transformer						
MO7K5S-TB	10.5	9.0	8.0	115		UUT 1, 2
Type: Heat Exchanger - Mfr: SWEP						
F85Hx90/1P	7.1	4.7	20.7	34		UUT 2
F200THx70/1P	7.2	9.6	20.7	86		UUT 1
Type: Hail Guard - Mfr: Smartd						
51-1932	2.0	90.5	46.1	75		UUT 2
Type: Line Reactor - Mfr: TCI						
KDRJ1H	9.0	11.0	10.0	75		UUT 1, 2
Type: Pump - Mfr: Hy-Save						
809-DS-050-STD-B	18.1	9.4	5.0	20		UUT 1, 2
Type: Victaulic Flange Adapter - Mfr: Victaulic						
Style 741 8" 300psi	1.1	13.5	14.5	16.6		UUT 1, 2
Type: Actuator - Mfr: Belimo						
PRXUP-3-T-250	8.0	12.1	5.4	13.2		UUT 1, 2
PKRXBUP-MFT-T	8.0	12.6	7.1	15		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 - SUBCOMPONENTS continues on the next page.

**SMARTD
AeroPure AF Air-Cooled Chillers**

TABLE 2 - SUBCOMPONENTS (continued)

Model Number	Dimensions (in)			Max. Wt. (lb)	Description / Notes	Basis
	Depth	Width	Height			
Type: Valve - Mfr: Danfoss						
034G7602	2.0	2.6	5.3	0.7		UUT 1, 2
032L1240	4.1	2.0	7.5	2.8		UUT 1, 2
034G3913	3.0	12.2	5.5	8.2		UUT 1
Type: Thermostat - Mfr: Chromolox						
DTS-HAZ-DC	4.8	6.3	11.4	6		UUT 1, 2
Type: Circuit Breaker - Mfr: ABB						
SU201M-C6	2.7	0.7	4.4	0.3		UUT 1, 2
SU201M-C30	2.7	0.7	4.4	0.3		UUT 1, 2
SU201M-C40	2.7	0.7	4.4	0.3		UUT 1, 2
SU201M-C50	2.7	0.7	4.4	0.3		UUT 1, 2
XT1HU3125AFF000SMT	5.9	4.1	2.8	2.2		UUT 1, 2
XT4HU3250EFF000XXX	6.3	5.5	4.1	4.4		UUT 1, 2
XT5HU360BDFF000XXX	7.1	5.5	4.1	5.5		UUT 2
Type: Valve - Mfr: Sporlan						
930035	4.4	2.2	7.2	4		UUT 1, 2
Type: Power Supply - Mfr: Phoenix Contact						
1252697	5.2	3.5	5.3	2.6		UUT 2
2904602	4.9	2.8	5.1	2.9		UUT 1
Type: Blanket - Mfr: Power Blanket						
CBCW1113X6G-CAP-A	7.2	15.5	15.5	2		UUT 1
CBCW1113X6G-CAP-B	7.8	13.8	13.8	2		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		UUT 1, 2
Type: Filter Drier - Mfr: Danfoss						
023Z5006	2.3	2.3	6.5	0.9		UUT 1, 2
Type: Coil - Mfr: Danfoss						
018F4115	2.0	4.0	2.0	0.7		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						
70254 (TF115-023)	2.5	3.1	6.5	0.7		UUT 1, 2
Type: Receptacle - Mfr: Wago						
51197944	3.1	5.0	2.4	0.6		UUT 1, 2
Type: Motor Protector - Mfr: ABB						
MS132-0.4	3.2	1.8	3.5	0.5		UUT 1, 2
MS132-10	3.2	1.8	3.5	0.6		UUT 1, 2
Type: GFCI - Mfr: Weidmuller						
7940102733	2.6	1.0	3.7	0.6		UUT 1, 2

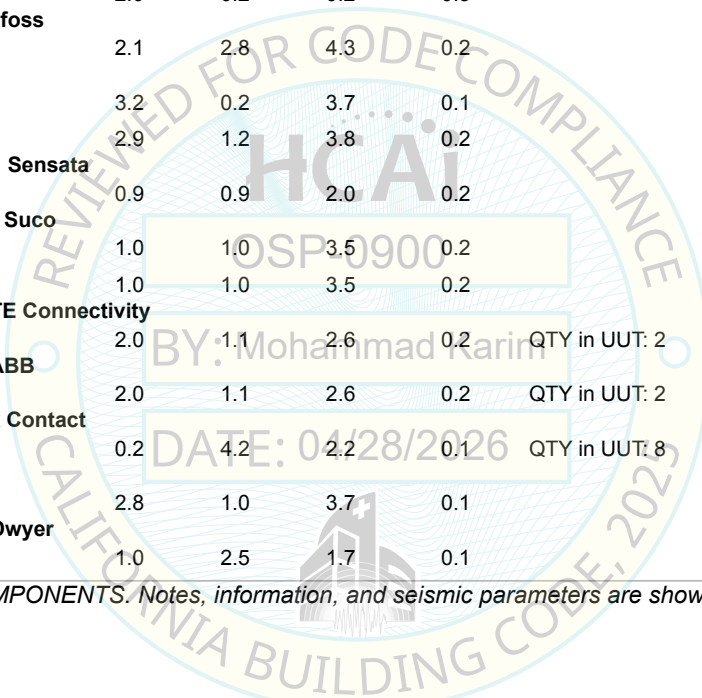
TABLE 2 - SUBCOMPONENTS continues on the next page.

SMARTD
AeroPure AF Air-Cooled Chillers

TABLE 2 - SUBCOMPONENTS (continued)

Model Number	Dimensions (in)			Max. Wt. (lb)	Description / Notes	Basis
	Depth	Width	Height			
Type: Flow Switch - Mfr: IFM SI5010	2.5	2.0	4.4	0.5		UUT 1, 2
Type: Gateway - Mfr: MSA Safety ProtoNode 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		UUT 1, 2
NTC120WH01	2.0	0.2	0.2	0.3		UUT 1, 2
Type: Valve Driver - Mfr: Danfoss 080G5035	2.1	2.8	4.3	0.2		UUT 1, 2
Type: Relay - Mfr: Wago 857-304	3.2	0.2	3.7	0.1		UUT 1, 2
858-304	2.9	1.2	3.8	0.2		UUT 1, 2
Type: Pressure Sensor - Mfr: Sensata 2CP5-71-50	0.9	0.9	2.0	0.2		UUT 1, 2
Type: Pressure Switch - Mfr: Suco 0134-45903-2-114_1_1	1.0	1.0	3.5	0.2		UUT 1, 2
0134-45803-2-111	1.0	1.0	3.5	0.2		UUT 1
Type: Terminal Block - Mfr: TE Connectivity 1SNL308010R0000	2.0	1.1	2.6	0.2	QTY in UUT: 2	UUT 1
Type: Terminal Block - Mfr: ABB 1SNL308010R0000	2.0	1.1	2.6	0.2	QTY in UUT: 2	UUT 2
Type: Breaker - Mfr: Phoenix Contact 1135753	0.2	4.2	2.2	0.1	QTY in UUT: 8	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. Notes, information, and seismic parameters are shown at the beginning of the table.



UUT 1

Manufacturer: Smartd
 Model number: AF120.3G.F26.20.S4
 Unit function: Air-Cooled Chiller
 Serial number: P4450



Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
497.1	90.2	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: 25024TR1.0 (dated 4-28-26), 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: Smartd - Evaporator (F262AEKB), Zhejiang DunAn International Trading Co., Ltd - Condenser Coil (53-0119-05-N, 53-0120-05-N), Danfoss - Turbocor Compressor (TG490-G-3-ST-SL), EBM-Papst - Fan (W3G910-KV1203), 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 8" 300psi), Belimo - Actuator (PRXUP-3-T-250, PKRXBUP-MFT-T), Phoenix Contact - Battery (1274118), ABB - Contactor (AF09Z-30-10-21, AF265-30-11-13), Danfoss - Valve (034G7602, 032L1240, 034G3913), Chromolox - Thermostat (DTS-HAZ-DC), ABB - Circuit Breaker (SU201M-C6, SU201M-C30, SU201M-C40, SU201M-C50, XT1HU3125AFF000SMT, XT4HU3250EFF000XXX), Sporlan - Valve (930035), Phoenix Contact - Power Supply (2904602), Power Blanket - Blanket (CBCW1113X6G-CAP-A, CBCW1113X6G-CAP-B), TACO - Flow Switch (IFSWBR-1), Phoenix Contact - UPS (2907071), Stego - Heater (03233.9-00), EXM - Door Switch (881FLRDS), Danfoss - Filter Drier (023Z5006), Danfoss - Coil (018F4115), Stride - Gateway (SGW-MB1524-T), Peco - Thermostat (70254 (TF115-023)), Wago - Receptacle (51197944), ABB - Motor Protector (MS132-0.4, MS132-10), Weidmuller - GFCI (7940102733), IFM - Flow Switch (SI5010), MSA Safety - Gateway (ProtoNode FPC-N64-2227), Carel - Temperature Sensor (NTC60HP00, NTC120WH01), Danfoss - Valve Driver (080G5035), Wago - Relay (857-304, 858-304), Sensata - Pressure Sensor (2CP5-71-50), Suco - Pressure Switch (0134-45903-2-114_1_1, 0134-45803-2-111), TE Connectivity - Terminal Block (1SNL308010R0000), Phoenix Contact - Breaker (1135753), ORing - Switch (IES-150B), Dwyer - Current Switch (MCS-111001)

Testing notes: N/A

ATTACHMENT 3: UNIT UNDER TEST SUMMARIES

SPECIAL SEISMIC CERTIFICATION

UUT 2

Manufacturer: Smartd
 Model number: AF050.20.F26.08.S3
 Unit function: Air-Cooled Chiller
 Serial number: P4514

Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
217.9	90.2	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: 25024TR1.0 (dated 4-28-26), 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:** Smartd - Evaporator (F262ASHA), Zhejiang DunAn International Trading Co., Ltd - Condenser Coil (53-0119-02-N, 53-0120-02-N), Danfoss - Turbocor Compressor (TTH375-G-1-ST-SL, TTH375-G-1-MT-SL), EBM-Papst - Fan (W3G910-KU2503), Marcus Transformer - Transformer (MO7K5S-TB), SWEP - Heat Exchanger (F85Hx90/1P), Smartd - Hail Guard (51-1932), TCI - Line Reactor (KDRJ1H), Hy-Save - Pump (809-DS-050-STD-B), Victaulic - Victaulic Flange Adapter (Style 741 8" 300psi), Belimo - Actuator (PRXUP-3-T-250), ABB - Contactor (AF09Z-30-10-21, AF265-30-11-13), Danfoss - Valve (034G7602, 032L1240), Chromolox - Thermostat (DTS-HAZ-DC), ABB - Circuit Breaker (SU201M-C6, SU201M-C30, SU201M-C40, SU201M-C50, XT1HU3125AFF000SMT, XT4HU3250EFF000XXX, XT5HU360BDF000XXX), Sporlan - Valve (930035), Phoenix Contact - Power Supply (1252697), Stego - Heater (03233.9-00), EXM - Door Switch (881FLRDS), Danfoss - Filter Drier (023Z5006), Danfoss - Coil (018F4115), Stride - Gateway (SGW-MB1524-T), Peco - Thermostat (70254 (TF115-023)), Wago - Receptacle (51197944), 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 (2CP5-71-50), Suco - Pressure Switch (0134-45903-2-114_1_1), ABB - Terminal Block (1SNL308010R0000), ORing - Switch (IES-150B), Dwyer - Current Switch (MCS-111001)
- Testing notes:** N/A