APPLICATION FOR OSHPD SPECIAL SEISMIC CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY

APPLICATION #: OSP-0169

OSHPD Special Seismic Certification Preapproval (OSP)

Type: ☐ New ☒ Renewal

Manufacturer Information

Manufacturer: DIMPLEX THERMAL SOLUTIONS

Manufacturer's Technical Representative: Doug Mathews

Mailing Address: 2625 Emerald Drive, Kalamazoo, MI 49001-4542

Telephone: (800) 968-5665 Email: dmathews@dimplexthermal.com

Product Information

Product Name: Chillers

Product Type: Chillers - Water Cooled

Product Model Number: See Attachment 1

General Description: Cataloged, air cooled condensing process chillers acceptable for indoor or outdoor use.

Mounting Description: Rigid base and Flexible base mounted. See Attachment 1.

Tested Seismic Enhancements: None

REVIEWED FOR CODE COMPLIANCE
OSHPD
OSP-0169
Dr. Mohammad Hadian
DATE: 07/28/2021
CALIFORNIA BUILDING CODE, 2019

Applicant Information

Applicant Company Name: EASE LLC

Contact Person: JONATHAN ROBERSON

Mailing Address: 5877 Pine Ave Suite 210, Chino Hills, CA 91709

Telephone: (909) 606-7622 Email: j.roberson@easeco.com

Title: Principal Engineer

California Licensed Structural Engineer Responsible for the Engineering and Test Report(s)

Company Name: EASE

Name: Jonathan Roberson California License Number: S4197

Mailing Address: 5877 Pine Ave., Suite 210, Chino Hills, CA 91709

Telephone: (951) 295-1892 Email: jon@EASECo.com

Certification Method

- [ ] GR-63-Core
- [x] ICC-ES AC156
- [ ] IEEE 344
- [ ] IEEE 693
- [ ] NEBS 3
- [ ] Other (Please Specify):

Testing Laboratory

Company Name: ENVIRONMENTAL TESTING LABORATORIES, INC. (ETL)

Contact Person: Brady Richard

Mailing Address: 11034 Indian Trail, Dallas TX 75229-3513

Telephone: (972) 247-9657 Email: brady@etldallas.com

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Seismic Parameters

Design Basis of Equipment or Components (F_p/W_p) = See Attachment 1, Table 1

S_{DS} (Design spectral response acceleration at short period, g) = See Attachment 1, Table 1

a_p (Amplification factor) = See Attachment 1, Table 1

R_p (Response modification factor) = See Attachment 1, Table 1

Ω_0 (System overstrength factor) = 2.0

I_p (Importance factor) = 1.5

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

Natural frequencies (Hz) = See Attachment 2

Overall dimensions and weight = See Attachment 1, Table 1

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OSHPD
OSP-0169
BY: Mohammad Karim
DATE: 07/28/2021
CALIFORNIA BUILDING CODE, 2019

OSHPD Approval (For Office Use Only) - **Approval Expires on 12/31/2025**

Date: 7/28/2021

Name: Mohammad Karim Title: Supervisor, Health Facilities

Special Seismic Certification Valid Up to: S_{DS} (g) = See Above z/h = See Above

Condition of Approval (if applicable):

ATTACHMENT 1: SEISMIC CERTIFIED COMPONENTS

Table 1:

Manufacturer	**DIMPLEX THERMAL SOLUTIONS**
System	**KOOLANT KOOLERS WO CHILLERS**

COMPONENT	MODEL NUMBER	APPROX. DIMENSIONS (IN.) W	D	H	DRY WT (LB.)	MOUNT	BASIS [1]	F_P/W_P	S_{DS}	z/h	a_P	R_P	Ω_0
3 Ton Chiller	WO3000-NF-L-407C-M	50	28 1/2	65.25	730	Rigid	UUT-1	1.51	2.1	1	1	2 ½	2
3 Ton Chiller High Ambient	WO3000-NF-L-407C-HA-M	50	28 1/2	65.25	730	Rigid	INT						
5 Ton Chiller	WO5000-NF-L-407C-M	60	37.75	65.25	900	Rigid	INT	1.44 1.13	2.0 2.5	1 0	1 1	2 ½ 2 ½	2 2
7.5 Ton Chiller	WO7500-NF-L-407C-M	60	37.75	65.25	935	Rigid	INT						
10 Ton Chiller	WO2-5000-2P-NF-L-407C-M	109	34.4	76.25	2000	Rigid	INT						
15 Ton Chiller	WO2-7500-2P-NF-L-407C-M	109	34.4	76.25	2000	Rigid	UUT-3						
12 Ton Chiller	WO2-2-3000-2P-NF-L-407C-M	109	34.4	76.25	2200	Rigid	INT						
20 Ton Chiller	WO2-10000-2P-NF-L-407C-M	115	44.25	88.5	2940	Rigid	UUT-A1R						
20 Ton Chiller	WO2-2-5000-2P-NF-L-407C-M	135	44.25	88.5	3500	Rigid	INT						
30 Ton Chiller	WO2-2-7500-2P-NF-L-407C-M	135	44.25	88.5	4000	Rigid	UUT-5						
40 Ton Chiller	WO2-2-10000-2P-NF-L-407C-M	135	44.25	88.5	4185	Rigid	INT						
3 Ton Chiller	WO3000-NF-L-407C-M	50	28 1/2	65.25	730	Flexible	UUT-2	4.73	2.1	1	2 ½	2	2
3 Ton Chiller High Ambient	WO3000-NF-L-407C-HA-M	50	28 1/2	65.25	730	Flexible	INT						
5 Ton Chiller	WO5000-NF-L-407C-M	60	37.75	65.25	900	Flexible	INT	4.50 1.88	2.0 2.5	1 0	2 ½ 2 ½	2 2	2 2
7.5 Ton Chiller	WO7500-NF-L-M-407C-M	60	37.75	65.25	935	Flexible	INT						
10 Ton Chiller	WO2-5000-2P-NF-L-407C-M	109	34.4	76.25	2000	Flexible	INT						
15 Ton Chiller	WO2-7500-2P-NF-L-407C-M	109	34.4	76.25	2000	Flexible	UUT-4						
12 Ton Chiller	WO2-2-3000-2P-NF-L-407C-M	109	34.4	76.25	2200	Flexible	INT						
20 Ton Chiller	WO2-10000-2P-NF-L-407C-M	115	44.25	88.5	2940	Flexible	UUT-A1S						
20 Ton Chiller	WO2-2-5000-2P-NF-L-407C-M	135	44.25	88.5	3500	Flexible	INT						
30 Ton Chiller	WO2-2-7500-2P-NF-L-407C-M	135	44.25	88.5	4000	Flexible	INT						
40 Ton Chiller	WO2-2-10000-2P-NF-L-407C-M	135	44.25	88.5	4185	Flexible	UUT-A2S						
Remote Display	Carel pGD	6.1	1.2	3.2	< 1	Wall	UUT6	1.44 1.13	2.0 2.5	1 0	1	2 ½	2

Mount	RIGID (BASE): free-standing, base-mounted condition with the component rigidly attached to a supporting structure and no lateral support above the base. FLEXIBLE (BASE / SPRING ISOLATOR): a free-standing, base mounted condition with spring isolators positioned between the equipment and supporting structure with or without a dunnage frame. WALL: unit is fully supported by a vertical wall or partition.
Notes	1. BASIS: • UUT#: Indicates that a test specimen matching these characteristics was tested as part of this testing program.. • INT (Interpolate/Extrapolate): indicates a model that was not specifically tested, and by which seismic certification is established through evaluation of testing of other, similar models in the product line 2. See Table 2 for seismic qualified subcomponents and options.

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OSP-0169
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ATTACHMENT 1: SEISMIC CERTIFIED COMPONENTS

TABLE 2: SEISMIC CERTIFIED SUBCOMPONENTS & OPTIONS

SUBCOMPONENT	MANUFACTURER	MODEL/PART NO.	DESCRIPTION/RATING	Max. WEIGHT (kg)	BASIS
COMPRESSORS					
Compressor	Sanyo / Panasonic	C-SBN263H8A	Scroll 3 Ton, 3.5 HP, 2.6KW	37	UUT1 / UUT2
Compressor	Sanyo / Panasonic	C-SBN453H8G	Scroll 5.0 Ton, 6.0 HP, 4.5KW	39	INT
Compressor	Sanyo / Panasonic	C-SCN603H8K	Scroll 7.5 Ton, 8.0HP, 6.0KW	67	UUT3 / UUT4 / UUT5
Compressor	Sanyo / Panasonic	C-SCN753H8K	Scroll 10.0 Ton, 10.0HP, 7.5KW	71	UUT-A1R / UUT-A1S / UUT-A2S
PUMPS					
Pump	Walrus	TPHK2T5-5S	3/4 HP Pump	12.7	Extrapolate
Pump	Walrus	TPHK4T5-5S	1-1/2 HP Pump	13.9	UUT1 / UUT2 / UUT3 / UUT4
Pump	Walrus	TPHK4T7-7S	2 HP Pump	14.6	INT
Pump	Walrus	TPHK8T6-3S	1-1/2 HP Pump	24.3	INT
Pump	Walrus	TPHK8T6-4S	3 HP Pump	27	INT
Pump	Walrus	TPHK8T6-5S	3 HP Pump	28	UUT5/UUT-A1R / UUT-A1S / UUT-A2S
FAN MOTORS					
Fan Motor	Marathon	048A17OF1H	144 mm diameter, 1/2 HP	7	UUT1/UUT2/UUT3/UUT4/UUT5/ UUT-A1R / UUT-A1S / UUT-A2S
FAN BLADE					
16" Fan Blade	Lau	61146601	406 mm diameter	1.1	UUT5/UUT-A1R/UUT-A1S
18" Fan Blade	Lau	61142601	457 mm diameter	0.9	UUT1 / UUT2 / UUT3 / UUT4 / UUT-A1R / UUT-A1S
HEAT EXCHANGERS					
Brazed Plate Heat Exchanger	Kaori	K095x20		7.5	UUT1 / UUT2
Brazed Plate Heat Exchanger	Kaori	K095x30B		9.7	INT
Brazed Plate Heat Exchanger	Kaori	K105x40B		13.1	UUT3 / UUT4
Brazed Plate Heat Exchanger	Kaori	K105x50B		15.5	INT
Brazed Plate Heat Exchanger	Kaori	K205x30C		22.8	UUT-A1R / UUT-A1S
Brazed Plate Heat Exchanger	Kaori	K205x40C		28	UUT5
Brazed Plate Heat Exchanger	Kaori	K205x70C		41	UUT-A2R / UUT-A2S
CONDENSERS					
Condenser	Keeprite	1104615	3-6 Ton	55	UUT1 / UUT2
Condenser	Cancoil Thermal Corporation	BC16990X	3-6 Ton	55	SAME as 1104615
Condenser	Keeprite	1104619	5 Ton	58	INT
Condenser	Keeprite	1104616	7.5-10 Ton	65	UUT3 / UUT4
Condenser	Cancoil Thermal Corporation	BC16991X	7.5-10 Ton	65	SAME as 1104616

Table continues next page

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ATTACHMENT 1: SEISMIC CERTIFIED COMPONENTS

TABLE 2: SEISMIC CERTIFIED SUBCOMPONENTS & OPTIONS

SUBCOMPONENT	MANUFACTURER	MODEL/PART NO.	DESCRIPTION/RATING	Max. WEIGHT (kg)	BASIS
Condenser	Keeprite	1104617	15 Ton	94	UUT-A1R / UUT-A1S
Condenser	Cancoil Thermal Corporation	BC16985X	15 Ton	94	SAME as 1104617
Condenser	Keeprite	1104618	20 Ton	120	UUT5 / UUT-A2S
Condenser	Cancoil Thermal Corporation	BC16984X	20 Ton	120	SAME as 1104618
FLOW SWITCH					
Flow Switch	Johnson Controls	F61MB-1C		0.9	UUT1 / UUT2 / UUT3 / UUT4 / UUT5 / UUT-A1R / UUT-A1S
Flow Switch	Johnson Controls	F6261-MAH		0.9	UUT-A2S
LIQUID FLUID LEVEL INDICATOR					
Liquid Level Switch	Harwil	L-21N-11A-1-B		0.2	UUT3 / UUT4 / UUT5
Liquid Level Switch	Harwil	L-21N-11A-2-B-25		0.2	INT
Liquid Level Switch	Harwil	L-21N-11A-2-F-25		0.2	UUT1 / UUT2
Liquid Level Switch	Harwil	L-21N/15A/A/B/1.6		0.2	UUT-A1R / UUT-A1S / UUT-A2S
PRESSURE RELIEF BYPASS VALVE					
Series 69 Pressure Relief Valve	Aquatrol	D1DX70	Series 69 1-1/4", 35-100 PSI	2	UUT3 / UUT4 / UUT5/ UUT-A1R / UUT-A1S / UUT-A2S
Series 69 Pressure Relief Valve	Aquatrol	C1DX70	Series 69 1", 35-100 PSI	1.4	INT
Pressure Relief Valve	Spraying Systems	6815G-3/4-HSS-300	3/4", 300 PSI	0.6	UUT1 / UUT2
ANTI-BACKFLOW KIT					
Solenoid Valve 1"	Asco	8210G004		2	UUT1 / UUT2
Solenoid Valve 1"	Asco	8210G027 8210G054		2	INT
Solenoid Valve 1-1/4"	Asco	8210G008		2.5	INT
Solenoid Valve 1-1/2"	Asco	8210G056		2.6	UUT3 / UUT4/ UUT-A1R / UUT-A1S / UUT-A2S
Solenoid Valve 2"	Asco	8210G100		4	UUT5
Series 600 Check Valve 1"	Watts	376354		0.6	UUT1, UUT2
Series 600 Check Valve 1-1/4"	Watts	376355		1	INT
Series 600 Check Valve 1-1/2"	Watts	376356		1.4	UUT3/UUT4/ UUT-A1R / UUT-A1S / UUT-A2S
Series 600 Check Valve 2"	Watts	376357		2	UUT5
CONTROLLER					
Controller	Carel	pCO1		0.4	UUT1 / UUT2 / UUT3 / UUT4 / UUT5 / UUT-A1R /UUT-A1S / UUT-A2S
Controller	Carel	PCOxs		0.4	UUT1 / UUT2 / UUT3 / UUT4

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Table continues next page

ATTACHMENT 1: SEISMIC CERTIFIED COMPONENTS

TABLE 2: SEISMIC CERTIFIED SUBCOMPONENTS & OPTIONS

SUBCOMPONENT	MANUFACTURER	MODEL/PART NO.	DESCRIPTION/RATING	Max. WEIGHT (kg)	BASIS
Condenser Fan Speed Control	Johnson Controls	P266		1	UUT1 / UUT2 / UUT3 / UUT4 / UUT5 / UUT-A1R / UUT-A1S / UUT-A2S

Notes

1. BASIS:
   - UUT#: Indicates that a test specimen matching these characteristics was tested as part of this testing program.
   - INT (Interpolate/Extrapolate): indicates a model that was not specifically tested, and by which seismic certification is established through evaluation of testing of other, similar models in the product line.
2. Certification in this table is limited subcomponents identified when installed as part of a complete assembly of the equipment defined in Table 1.
3. Table excludes all Electrical Controllers, Switches, Transformers, Circuit Breakers and Fuses up to 10 lbs. or 10 amperes, except as noted.

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OSHPD
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ATTACHMENT 2: TEST SPECIMEN SUMMARY

UUT- 1 3 Ton Chiller / Rigid Base

MANUFACTURER: Dimplex Thermal Solutions

IDENTIFICATION: WO-3000-NF-L-M-407C

DESCRIPTION:

Single Refrigeration Circuit & Single Fluid Circuit
Compliant with UL1995 standards

Controller:	Carel PCOxs
Compressor :	(1) Sanyo C-SBN263H8A 3 Ton
Pump :	(1) Walrus TPHK4T5-5S 2.0 kW
Fan Motor:	(1) ½ HP Marathon 048A170F1H
Fan Blade:	(1) 18-in Lau 61142601
Heat Exchanger:	(1) Kaori K095x20
Condenser:	(1) 3-6 Ton Keeprite 1104615
Refrigerant:	407c
Enclosure:	Stainless steel enclosure by Dimplex
Control Cabinet:	Stainless steel NEMA 4 electrical enclosure by Saginaw Control & Engineering
Tank:	40 gallon, Stainless Steel, Sealed w/ air vent

Anti-backflow kit, pressure relief bypass valve, flow switch, & low fluid tank level indicator. Unit full of contents during test.

MOUNTING: Rigid Base mount w/ (4)-½" dia. Grade 5 bolts

PROPERTIES:

DIMENSIONS (in.)			Weight (lb.)	LOWEST RESONANT FREQUENCY (Hz.)			
Width	Depth	Height	Dry / Operating	Front-Axis	Side-Axis	Vert-Axis	Off-Axis
51	27.5	60.75	685 / 1100	5.8	3.3	10.8	2.8

SHAKE TABLE TEST PARAMETERS

CODE	TEST CRITERIA	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2019	ICC-ES AC156	2.1	1	1.5	3.36	2.52	1.41	0.57

Unit maintained structural integrity and remained functional per manufacturer requirement

UUT- 2 3 Ton Chiller / Spring Isolator

MANUFACTURER: Dimplex Thermal Solutions

IDENTIFICATION: WO-3000-NF-L-M-407C

DESCRIPTION:

Single Refrigeration Circuit & Single Fluid Circuit
Compliant with UL1995 standards

Controller:	Carel PCOxs
Compressor :	(1) Sanyo C-SBN263H8A 3 Ton
Pump :	(1) Walrus TPHK4T5-5S 2.0 kW
Fan Motor:	(1) ½ HP Marathon 048A170F1H
Fan Blade:	(1) 18-in Lau 61142601
Heat Exchanger:	(1) Kaori K095x20
Condenser:	(1) 3-6 Ton Keeprite 1104615
Refrigerant:	407c
Enclosure:	Stainless steel enclosure by Dimplex
Control Cabinet:	Stainless steel NEMA 4 electrical enclosure by Saginaw Control & Engineering
Tank:	40 gallon, Stainless Steel, Sealed w/ air vent

Anti-backflow kit, pressure relief bypass valve, flow switch, & low fluid tank level indicator. Unit full of contents during test.

MOUNTING: SPRING ISOLATED: (4)-Sundown Model No. VMSSM1 (1" deflection). Each isolator anchored w/ ½" dia. Grade 5 bolts to UUT and (2)-½" dia. Grade 5 bolts to steel table extension. (Isolators manufactured by Vimco Part No. SSMA-1-127)

PROPERTIES:

DIMENSIONS (in.)			Weight (lb.)	LOWEST RESONANT FREQUENCY (Hz.)			
Width	Depth	Height	Dry / Operating	Front-Axis	Side-Axis	Vert-Axis	Off-Axis
51	27.5	60.75	685 / 1100	1.8	1.7	5.6	1.6

SHAKE TABLE TEST PARAMETERS

CODE	TEST CRITERIA	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2019	ICC-ES AC156	2.1	1	1.5	3.36	2.52	1.41	0.57

Unit maintained structural integrity and remained functional per manufacturer requirement

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CSHBD
OSP-0169
BY: Mohammad Karim
DATE: 07/28/2021
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ATTACHMENT 2: TEST SPECIMEN SUMMARY

UUT- 3 15 Ton Chiller / Rigid Base

MANUFACTURER: Dimplex Thermal Solutions

IDENTIFICATION: WO2-7500-2P-NF-L-M-407C

DESCRIPTION: Dual, Independent Refrigeration Circuit; Dual, Redundant Fluid Circuit
Compliant with UL1995 standards

Controller:	Carel PCOxs
Compressor :	(2) 7.5 Ton Sanyo C-SCN603H8K
Pump :	(2) 2.0 kW Walrus TPHK4T5-5S
Fan Motor:	(4) ½ HP Marathon 048A170F1H
Fan Blade:	(4) 18-in Lau 61142601
Heat Exchanger:	(2) Kaori K105x40B
Condenser:	(2) 7.5-10 Ton Keeprite 1104616
Refrigerant:	407c
Enclosure:	Galvanized steel enclosure by Dimplex
Cabinet:	Galvanized steel NEMA 4 electrical enclosure, site glass/fill tube by Saginaw Control & Engineering
Tank:	72 gallon, stainless steel, sealed w/ air vent tank.

Anti-backflow kit, pressure relief bypass valve, flow switch, & low fluid tank level indicator. Unit full of contents during test.

MOUNTING: RIGID BASE: (8)-½" Dia. Grade 5 bolts (2 lines of 4 bolts ea.).

PROPERTIES:

DIMENSIONS (in.)			Operating	LOWEST RESONANT FREQUENCY (Hz.)		
Width	Depth	Height	Weight (lb.)	Transverse-Axis	Longitudinal-Axis	Vertical-Axis
109	34.4	76.25	3000	5.5	5.3	10.2

SHAKE TABLE TEST PARAMETERS

CODE	TEST CRITERIA	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2019	ICC-ES AC156	2.0 2.5	1.0 0.0	1.5	3.2 2.5	2.4 1.04	1.34 1.68	0.54 0.68

Unit maintained structural integrity and remained functional per manufacturer requirement.

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UUT- 4 15 Ton Chiller / Spring Isolator

MANUFACTURER: Dimplex Thermal Solutions

IDENTIFICATION: WO2-7500-2P-NF-L-M-407C

DESCRIPTION: Dual, Independent Refrigeration Circuit; Dual, Redundant Fluid Circuit
Compliant with UL1995 standards

Controller:	Carel PCOxs
Compressor :	(2) 7.5 Ton Sanyo C-SCN603H8K
Pump :	(2) 2.0 kW Walrus TPHK4T5-5S
Fan Motor:	(4) ½ HP Marathon 048A170F1H
Fan Blade:	(4) 18-in Lau 61142601
Heat Exchanger:	(2) Kaori K105x40B
Condenser:	(2) 7.5-10 Ton Keeprite 1104616
Refrigerant:	407c
Enclosure:	Galvanized steel enclosure by Dimplex
Cabinet:	Galvanized steel NEMA 4 electrical enclosure, site glass/fill tube by Saginaw Control & Engineering
Tank:	72 gallon, stainless steel, sealed w/ air vent tank.

Anti-backflow kit, pressure relief bypass valve, flow switch, & low fluid tank level indicator. Unit full of contents during test.

MOUNTING: SPRING ISOLATED: (8) Mason SLRSO – B – 750 spring isolators [2 lines of 4 isolators along length of UUT] w/ (4) ½" Grade 5 bolts at top & bottom of each isolator.

PROPERTIES:

DIMENSIONS (in.)			Operating	LOWEST RESONANT FREQUENCY (Hz.)		
Width	Depth	Height	Weight (lb.)	Transverse-Axis	Longitudinal-Axis	Vertical-Axis
109	34.4	76.25	3000	2.4	2.8	5.7

SHAKE TABLE TEST PARAMETERS

CODE	TEST CRITERIA	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2019	ICC-ES AC156	2.0 2.5	1.0 0.0	1.5	3.2 2.5	2.4 1.04	1.34 1.68	0.54 0.68

Unit maintained structural integrity and remained functional per manufacturer requirement

UUT- 5 30 Ton Chiller / Rigid Base

MANUFACTURER: Dimplex Thermal Solution

IDENTIFICATION: WO2-2-7500-2P-NF-L-M-407C

DESCRIPTION:

Dual, Independent Refrigeration Circuit with tandem comps;
Dual, Redundant Fluid Circuit
Compliant with UL1995 standards

Controller:	Carel PCOxs
Compressor :	(4) 7.5 Ton Sanyo C-SCN603H8K
Pump :	(2) 3.9 kW Walrus TPHK8T6-5S
Fan Motor:	(8) ½ HP Marathon 048A170F1H
Fan Blade:	(8) 16-in Lau 61142601
Heat Exchanger:	(2) Kaori K205x40C
Condenser:	(2) 20 Ton Keeprite 1104618
Refrigerant:	407c
Enclosure:	Galvanized steel enclosure by Dimplex
Cabinet:	Galvanized, NEMA 4 electrical enclosure, site glass/fill tube, V-coil cabinet configuration by Saginaw Control & Engineering
Tank:	100 gallon, stainless steel, sealed with air-vent

Anti-backflow kit, pressure relief bypass valve, flow switch, & low fluid tank level indicator. Unit full of contents during test.

MOUNTING: RIGID BASE: (8) - ½" Grade 5 bolts (2 lines of 4 bolts ea).

PROPERTIES:

DIMENSIONS (in.)				LOWEST RESONANT FREQUENCY (Hz.)		
Width	Depth	Height	Weight (lb.)	Front-Axis	Side-Axis	Vert-Axis
135	41.5	88.5	3926 (Dry)	5.8	3.0	7.5

SHAKE TABLE TEST PARAMETERS

CODE	TEST CRITERIA	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2019	ICC-ES AC156	2.0 2.5	1.0 0.0	1.5	3.2 2.5	2.4 1.04	1.34 1.68	0.54 0.68

Unit maintained structural integrity and remained functional per manufacturer requirement

UUT- 6 Carel pGD Remote Display

MANUFACTURER: Philips Healthcare

IDENTIFICATION: pGD

DESCRIPTION: Optional interface panel to for remote display & programming of chillers.

MOUNTING: WALL MOUNTED: (2) mfr-supplied machine screws into (2) layers 5/8" Gyp Bd

PROPERTIES:

DIMENSIONS (in.)				LOWEST RESONANT FREQUENCY (Hz.)		
Width	Depth	Height	Weight (lb.)	Transverse-Axis	Longitudinal-Axis	Vertical-Axis
6.1	1.2	3.2	< 1	---	---	---

SHAKE TABLE TEST PARAMETERS

CODE	TEST CRITERIA	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2019	ICC-ES AC156	2.0	1.0	1.5	3.2	2.4	1.34	0.54

Unit maintained structural integrity and remained functional per manufacturer requirement

OSHPD REVIEWED FOR CODE COMPLIANCE OSP-0169 BY: Mohammad Karim DATE: 07/28/2021 CALIFORNIA BUILDING CODE, 2019

ATTACHMENT 2: TEST SPECIMEN SUMMARY

UUT- A1R 20 Ton Chiller / Rigid Base

Manufacturer: Dimplex Thermal Solutions

Identification: WO2-10000-2P-NF-L-M-407C:

Description: Dual, Independent Refrigeration Circuit; Dual, Redundant Fluid Circuit Compliant with UL1995 standards

Controller: Carel PCO1 / Johnson Controls P266
Compressor : (2) 10 Ton Panasonic C-SCN753H8K
Pump : (2) 3 hp Walrus TPHK4T5-5S
Fan Motor: (4) ½ HP Marathon 048A170F1H
Fan Blade: (4) 18-in Lau 61142601
Heat Exchanger: (2) Kaori K205x30C
Condenser: (2) 15 Ton Keeprite 1104617
Refrigerant: 407c
Enclosure: Galvanized steel enclosure by Dimplex
Cabinet: Galvanized steel NEMA 4 electrical enclosure, site glass/fill tube by Saginaw Control & Engineering
Tank: 100 gallon, stainless steel, sealed w/ air vent tank.
Anti-backflow kit, pressure relief bypass valve, flow switch, & low fluid tank level indicator. Unit full of contents during test.

Mounting: RIGID BASE: (8) – ½" dia. GR8 hex head bolts with standard washers.

PROPERTIES:

DIMENSIONS (in.)			Weight (lb.)	LOWEST RESONANT FREQUENCY (Hz.)		
Width	Depth	Height	Dry/Operating	Front-Axis	Side-Axis	Vert-Axis
115	44.25	88.5	2940 / 3705	3.9	4.9	11.7

SHAKE TABLE TEST PARAMETERS

CODE	TEST CRITERIA	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2019	ICC-ES AC156	2.0 2.5	1.0 0.0	1.5	3.2 2.5	2.4 1.04	1.34 1.68	0.54 0.68

Unit maintained structural integrity and remained functional per manufacturer requirements.

REVIEWED FOR CODE COMPLIANCE OSHPD OSP-0169 BY: Mohammad Karim DATE: 07/28/2021 CALIFORNIA BUILDING CODE, 2019

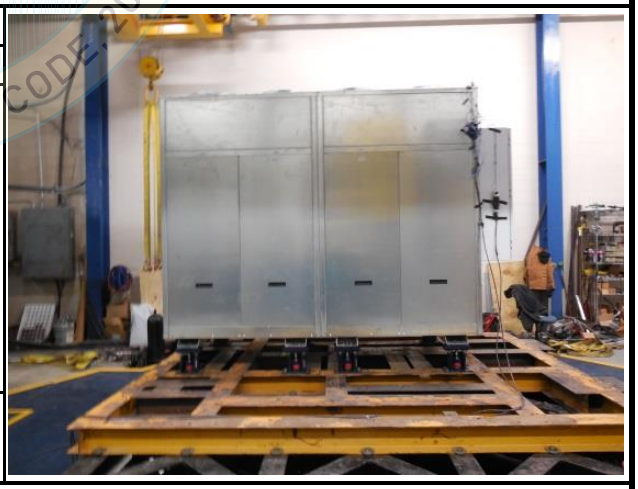
UUT- A1S 20 Ton Chiller / Spring Isolator

MANUFACTURER: Dimplex Thermal Solutions

IDENTIFICATION: WO2-10000-2P-NF-L-M-407C

DESCRIPTION: Dual, Independent Refrigeration Circuit; Dual, Redundant Fluid Circuit Compliant with UL1995 standards

Controller: Carel PCO1 / Johnson Controls P266
Compressor : (2) 10 Ton Panasonic C-SCN753H8K
Pump : (2) 3 hp Walrus TPHK4T5-5S
Fan Motor: (4) ½ HP Marathon 048A170F1H
Fan Blade: (4) 18-in Lau 61142601
Heat Exchanger: (2) Kaori K205x30C
Condenser: (2) 15 Ton Keeprite 1104617
Refrigerant: 407c
Enclosure: Galvanized steel enclosure by Dimplex
Cabinet: Galvanized steel NEMA 4 electrical enclosure, site glass/fill tube by Saginaw Control & Engineering
Tank: 100 gallon, stainless steel, sealed w/ air vent tank.
Anti-backflow kit, pressure relief bypass valve, flow switch, & low fluid tank level indicator. Unit full of contents during test.



MOUNTING: SPRING ISOLATED: (8) Mason SLRSO – B – 450 spring isolators w/ (4) ½" Grade 8 bolts at top & bottom of each isolator.

PROPERTIES:

DIMENSIONS (in.)			Weight (lb.)	LOWEST RESONANT FREQUENCY (Hz.)		
Width	Depth	Height	Dry/Operating	Transverse-Axis	Longitudinal-Axis	Vertical-Axis
115	44.25	88.5	2940 / 3705	2.5	2.6	6.4

SHAKE TABLE TEST PARAMETERS

CODE	TEST CRITERIA	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2019	ICC-ES AC156	2.0	1.0	1.5	3.2	2.4	1.34	0.54

Unit maintained structural integrity and remained functional per manufacturer requirement.

ATTACHMENT 2: TEST SPECIMEN SUMMARY

UUT- A2S	**40 Ton Chiller / Spring Isolators**
MANUFACTURER:	Dimplex Thermal Solutions
IDENTIFICATION:	WO2-2-10000-2P-NF-L-M-407C
DESCRIPTION:	Dual, Independent Refrigeration Circuit; Dual, Redundant Fluid Circuit Compliant with UL1995 standards Controller: Carel PCOxs Compressor : (4) 10 ton Panasonic C-SCN753H8K Pump : (2) 3 hp Walrus TPHK8T6-5S Fan Motor: (8) ½ HP Marathon WB48A170F1H Fan Blade: (8) 18-in Lau 61142601 Heat Exchanger: (2) Kaori K105x40B Condenser: (2) 20 Ton Keeprite 1104618 Refrigerant: 407c Enclosure: Galvanized steel enclosure by Dimplex Cabinet: Galvanized steel NEMA 4 electrical enclosure, site glass/fill tube by Saginaw Control & Engineering Tank: Stainless steel, sealed w/ air vent tank. Anti-backflow kit, pressure relief bypass valve, flow switch, & low fluid tank level indicator. Unit full of contents during test.
MOUNTING:	SPRING ISOLATED: (8) Mason SLRSO – B – 750 spring isolators [2 lines of 4 isolators along length of UUT] w/ (4) ½" Grade 8 bolts at top & bottom of each isolator. Unit full of contents during test.

PROPERTIES:

DIMENSIONS (in.)			Weight (lb.)	LOWEST RESONANT FREQUENCY (Hz.)		
Width	Depth	Height	Dry / Operating	Front-Axis	Side-Axis	Vert-Axis
135	44.25	88.5	4185 / Wet 4750	3.1	2.8	6.1

SHAKE TABLE TEST PARAMETERS

CODE	TEST CRITERIA	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2019	ICC-ES AC156	2.0 2.5	1.0 0.0	1.5	3.2 2.5	2.4 1.04	1.34 1.68	0.54 0.68

Unit maintained structural integrity and remained functional per manufacturer requirement

REVIEWED FOR CODE COMPLIANCE
OSHPD
OSP-0169
BY: Mohammad Karim
DATE: 07/28/2021
CALIFORNIA BUILDING CODE, 2019