



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-0369

HCAI Special Seismic Certification Preapproval (OSP)

Type: ☐ New ☒ Renewal

Manufacturer Information

Manufacturer: Filtrine Manufacturing Company

Manufacturer's Technical Representative: Turner Hansel

Mailing Address: 15 Kit Street, Keene, NH 03431

Telephone: (603) 525-5500

Email: thansel@filtrine.com

Product Information

Product Name: PCP Closed Loop Process Liquid Chillers

Product Model Number(s): See attached

Product Category: Chillers

Product Sub-Category: Chillers - Air Cooled

General Description: The certified units are weather-resistant, air cooled models for outdoor installation and consist of compressors, condenser, evaporator, pump, fan motor, and cooling transformer. Seismic enhancements made to the test units and modifications required to address the anomalies observed during testing shall be incorporated into the production units.

Mounting Description: Base Mounted Rigid

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: DCL Labs, LLC

Contact Person: Nastya Veyngerova

Mailing Address: 1315 Greg Street, Suite 109, Sparks, NV 89431

Telephone: (775) 358-5085

Email: nastya.veyngerova@shaketest.com

Title: Seismic Test Engineer



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

Company Name: THE VMC GROUP

Name: Kenneth Tarlow California License Number: S2851

Mailing Address: 980 9th Street, 16th Floor, Sacramento, CA 95814

Telephone: (832) 627-2214 Email: ken.tarlow@thevmcgroup.com

Certification Method

☐ GR-63-Core ☒ ICC-ES AC156 ☐ IEEE 344 ☐ IEEE 693 ☐ NEBS 3
☐ Other (Please Specify): _____

Testing Laboratory

Company Name: DYNAMIC CERTIFICATION LABORATORY (DCL)

Contact Person: Josh Sailer

Mailing Address: 1315 Greg St., Ste 109, Sparks NV 89431

Telephone: (775) 358-5085 Email: josh@shaketest.com

BY: Timothy J. Piland

DATE: 09/25/2025



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Seismic Parameters

Certified Response Spectral Acceleration Factors: (F_p/W_p)

Horizontal (A Flx-H), $g =$ 2.56 (A Rig-H), $g =$ 1.72

Vertical (A Flx-V), $g =$ 1.07 (A Rig-V), $g =$ 0.43

SDS (Design spectral response acceleration at short period, g) = 1.60

H_f (Force amplification height factor) = 3.5 at $z/h=1.0$

R_u (Structure ductility reduction factor) = 1.3 at $z/h=1.0$

I_p (Importance factor) = 1.5

z/h (Height ratio factor) = 1

HCAI Approval (For Office Use Only) - Approval Expires on 09/25/2031

Date: 9/25/2025

Name: Timothy Piland

Title: Senior Structural Engineer

Condition of Approval (if applicable): _____

OSP-0369

BY: Timothy J. Piland

DATE: 09/25/2025

Special Seismic Certification

Table 1 - Certified Components



DCL Project Number: 51630-2501

Manufacturer: Filtrine

Product Line: PCP Closed Loop Process Liquid Chillers

Mounting: Rigid Base Mount

Certified Seismic Levels: $S_d = 1.60g$ with $z/h = 1.0$ and $z/h = 0.0$

Factors for Force Amplification and Structure Ductility Reduction: $H_f = 3.5$ at $z/h=1.0$; 1.0 at $z/h=0$ and $R_w = 1.3$ at $z/h=1.0$; 1.0 at $z/h=0$

Model Number	Max. Dimensions [in.]			Max. Operating Weight [lb.]	Unit
	Depth	Width	Height		
PCP-200-33A-WP-OSP	62	27	66	1,170	UUT1
PCP-300G-36A-WP-OSP	72	32	75	1,400	Interpolated
PCP-300S-38A-WP-OSP	72	32	75	1,400	Interpolated
PCP-300G-40A-WP-OSP	72	32	75	1,400	Interpolated
PCP-300G-44A-WP-OSP	72	32	75	1,400	Interpolated
PCP-500G-48A-WP-OSP	82	35	77	1,800	Interpolated
PCP-500G-60A-WP-OSP	82	35	77	1,800	Interpolated
PCP-500S-62A-WP-OSP	82	35	77	1,800	Interpolated
PCP-500G-70A-WP-OSP	82	35	77	1,800	Interpolated
PCP-750G-80A-WP-OSP	119	39	77	2,200	Interpolated
PCP-750G-96A-WP-OSP	119	39	77	2,200	Interpolated
PCP-750S-98A-WP-OSP	119	39	77	2,200	Interpolated
PCP-1000G-122A-WP-OSP	119	49	77	3,000	Interpolated
PCP-1000S-140A-WP-OSP	119	49	83	3,000	Interpolated
PCP-1500S-180A-WP-OSP	140	52	83	3,500	Interpolated
PCP-2000-230A-WP-OSP	140	52	85	4,000	Interpolated
PCP-2000S-230A-WP-OSP	140	52	85	4,600	Interpolated
PCP-2500-270A-WP-OSP	140	52	85	4,800	Interpolated
PCP-2500S-270A-WP-OSP	140	52	85	4,800	Interpolated
PCP-3000-330A-WP-OSP	140	52	85	5,420	UUT2

DATE: 09/25/2025



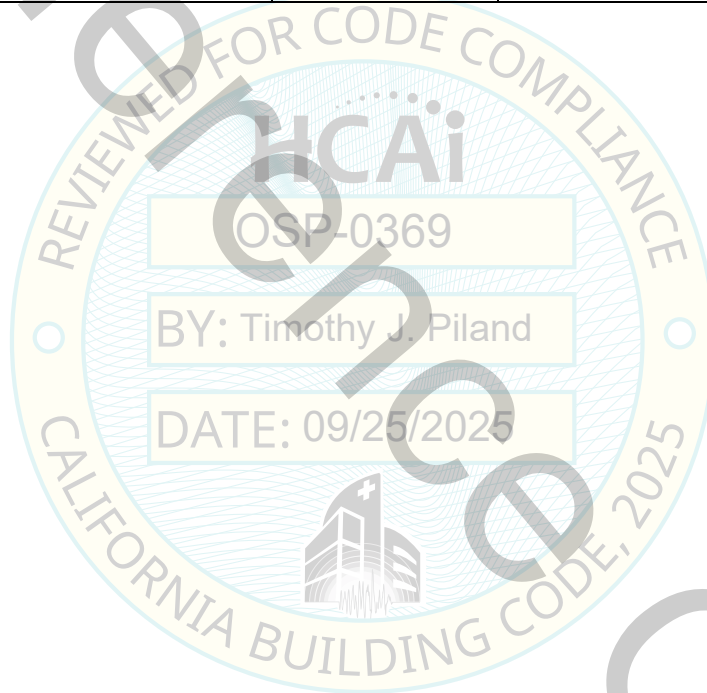
Special Seismic Certification
Table 2 - Nomenclature Chart



DCL Project Number: 51630-2501

Product Line: PCP Closed Loop Process Liquid Chillers

A B - C D - E F - G - H			
Variable	Definition	Allowable Value	Allowable Value Description
A	Equipment type	PC	Process chiller
B	Pump type	P	Circulating pump
C	Nominal compressor horsepower times 100	200 - 3000	2 to 30 nominal compressor horsepower
D	Compressor type	G	Scroll compressor
		S	Semi-hermetic compressor
		—	Combination of scroll and semi-hermetic compressors
E	Nominal MBTU/hr rating at 68°F discharge water temperature	33 - 330	33 to 330 nominal MBTU/hr rating at 68°F discharge water temperature
F	Condenser type	A	Air cooled condenser
G	Enclosure type	WP	Weather resistant for outdoor use
H	OSHDP unit	OSP	Designed specifically for OSHDP OSP certification



Only

Special Seismic Certification

Table 3 - Certified Subcomponents



DCL Project Number: 51630-2501

Product Line: PCP Closed Loop Process Liquid Chillers

Compressor - Scroll					
Model Number	Manufacturer	Description	Material	Weight [lb.]	Unit
ZB21KCE-TFJ	Copeland	230V	Stainless Steel, Cast Iron	60	UUT1
ZB21KCE-TF(*)		230V-460V		60	Interpolated
YB23KSE-TF(*)				63	Interpolated
ZB26KCE-TF(*)				63	Interpolated
YB27KSE-TF(*)				63	Interpolated
ZB30KCE-TF(*)				78	Interpolated
YB34KAE-TF(*)				83	Interpolated
ZB38KCE-TF(*)				83	Interpolated
YB44KAE-TF(*)				86	Interpolated
YB40KAE-TF(*)				87	Interpolated
ZB45KCE-TF(*)				87	Interpolated
YB51KAE-TF(*)				126	Interpolated
ZB50KCE-TF(*)				126	Interpolated
ZB66KCE-TF(*)				132	Interpolated
YB68KAE-TF(*)				135	Interpolated
ZB76KCE-TF(*)				135	Interpolated
ZB76KCE-TFD		460V		135	UUT2

* Insert voltage code J, V, D, S, for 220-240, 200, 380-420, and 200-220 motor voltage

Compressor - Semi-Hermetic						
Old Model Number	New Model Number	Manufacturer	Description	Material	Weight [lb.]	Unit
2C0278SH	2HES-1	Bitzer	208-230V/3Ph	Stainless Steel, Cast Iron	104	UUT1
N/A	2EES-2				163	Interpolated
N/A	2HES-3				108	Interpolated
2C0484SH	2EES-3				170	Interpolated
4C0770SH	4FES-5				209	Interpolated
4C1145SH	4DES-7				220	Interpolated
N/A	4PE-12				324	Interpolated
4C1761PH	4TE-12				326	Interpolated
4C2067PH	4PE-15				344	Interpolated
N/A	4JE-15				423	Interpolated
N/A	4HE-18				421	Interpolated
4C2397PH	4NE-20				351	Interpolated
4B2707PH	4JE-22				423	Interpolated
4B3139PH	4HE-25				440-480V/3Ph	456

Condenser					
Model Number	Manufacturer	Description	Material	Weight [lb.]	Unit
KCM009A-T3A-A11H	Keeprite	208/230V	Stainless Steel, Aluminum, Copper	245	UUT1
KCM009A-T(*)A-A11H		208/230V to 460V		245	Interpolated
KCM010A-T(*)A-A11H				250	Interpolated
KCM011A-T(*)A-A11H				265	Interpolated
KCM012A-T(*)A-A11H				270	Interpolated
KCM013A-T(*)A-A12H				410	Interpolated
KCM014A-T(*)A-A12H				415	Interpolated
KCM016A-T(*)A-A12H				420	Interpolated
KCM017A-T(*)A-A12H				450	Interpolated
KCM018A-T(*)A-A12H				455	Interpolated
KCM020A-T(*)A-A12H				460	Interpolated
KCM021A-T(*)A-A12H				480	Interpolated
KCM022A-T(*)A-A12H				490	Interpolated
KCM024A-T(*)A-A12H				500	Interpolated
KCM028A-T(*)A-A13H				630	Interpolated
KCM030A-T(*)A-A13H				650	Interpolated
KCM032A-T(*)A-A13H				680	Interpolated
KCM032A-T4A-A13H		460V		680	UUT2

* Insert voltage code 3 or 4, for 208/230V or 460V

Special Seismic Certification

Table 4 - Certified Subcomponents (cont.)



DCL Project Number: 51630-2501

Product Line: PCP Closed Loop Process Liquid Chillers

Evaporator					
Model Number	Manufacturer	Description	Material	Weight [lb.]	Unit
80' x 1" S/S tubing	Filtrine	Stainless Stainless Steel tubing	Stainless Steel	39	UUT1
< 80' and > 135' of 3/4" S/S tubing				70	Interpolated
< 80' and > 600' of 1" S/S tubing				329	Interpolated
600' x 1" S/S tubing	Kelvion ¹	5"x20" brazed plate	Stainless Steel	290	UUT2
CH5				19	UUT2 ²

1. Was GEA Heat Exchangers

2. Manufacturing process is ISO 9001 certified

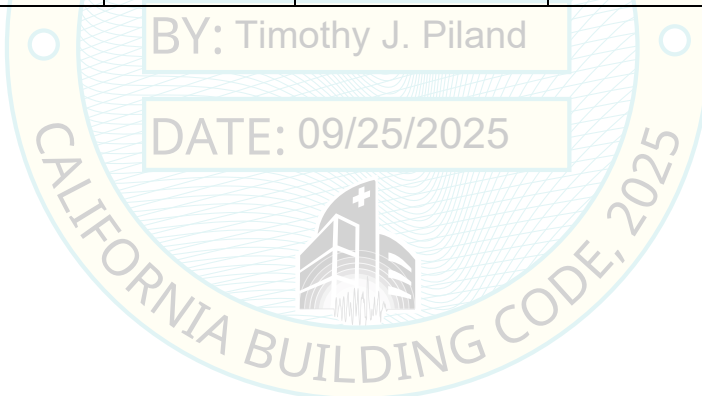
Pump					
Model Number	Manufacturer	Description	Material	Weight [lb.]	Unit
SSPC1, 1 hp	American Stainless Pump	6" stainless steel casing	Stainless Steel	30	UUT1
SSPC1, 1.5 hp		6" stainless steel casing		33	Interpolated
SSPC1, 2 hp		6" stainless steel casing		37	Interpolated
7SP, 3 hp		7" stainless steel casing		58	Interpolated
7SP, 5 hp		7" stainless steel casing		69	UUT2

Fan Motor					
Model Number	Manufacturer	Description	Material	Weight [lb.]	Unit
3/4 hp 208-230/60/3 1075 rpm	Marathon	3/4 hp	Stainless Steel, Copper	23	UUT1
3/4 hp 460/60/3 1075 rpm				23	UUT2

Control Transformer					
Model Number	Manufacturer	Description	Material	Weight [lb.]	Unit
AE070150	Acme Transformer	208/230/460	Stainless Steel, Copper	8	UUT1
AE070250		Pri 120 sec		8	UUT2

BY: Timothy J. Piland

DATE: 09/25/2025



Special Seismic Certification
Table 5 - Tested Units



DCL Project Number: 51630-2501

Manufacturer: Filtrine

Product Line: PCP Closed Loop Process Liquid Chillers

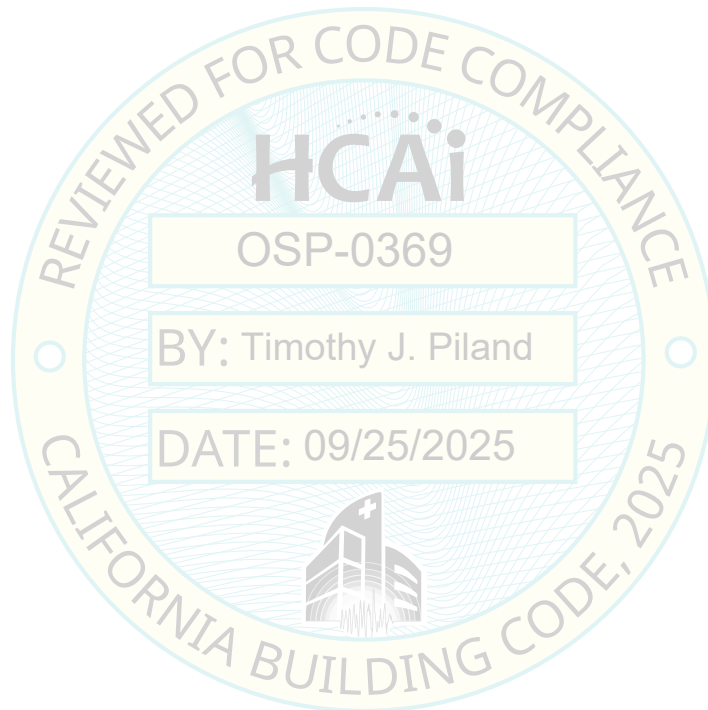
DCL Report Number: 81973-1301

Mounting: Rigid Base Mount

Certified Seismic Levels: $S_{ds} = 1.60g$ with $z/h = 1.0$ and $z/h = 0.0$

Factors for Force Amplification and Structure Ductility Reduction: $H_f = 3.5$ at $z/h=1.0$; 1.0 at $z/h=0$ and $R_{\mu} = 1.3$ at $z/h=1.0$; 1.0 at $z/h=0$

Model Number	Dimensions [in.]			Operating Weight [lb.]	Unit
	Length	Width	Height		
PCP-200-33A-WP-OSP	62	27	66	1,170	UUT1
PCP-3000-330A-WP-OSP	140	52	85	5,420	UUT2



UNIT UNDER TEST (UUT) Summary Sheet



UUT1

DCL Repot Number: 81973-1301

Manufacturer: Filtrine

Product Line: PCP Closed Loop Process Liquid Chillers

Model Number: PCP-200-33A-WP-OSP

Product Construction Summary: Cabinet constructed of anodized aluminum panels with stainless steel corner legs and top on a welded angle iron frame. Welded stainless steel cooling tank shell and immersion coil evaporator. Stainless steel centrifugal pump mounted on rubber pads over a stainless steel condensation tray.

Options / Component Summary: Rigid base mounted. The unit was a weather-resistant, air-cooled model for outdoor installation and contained compressors, condenser, evaporator, pump, fan, motor and control transformer.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.

UUT Properties

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Length	Depth	Height	Front-Back	Side-Side	Vertical
1,170	62	27	66	14.0	11.5	15.8

Seismic Test Parameters

Building Code	Test Criteria	S _{ds} (g)	z/h	H _f	R _μ	I _p	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2025	ICC-ES AC156	2.00	1.0	3.5	1.3	1.5	3.20	2.40	N/A	N/A
		2.00	0.0	1.0	1.0		N/A	N/A	1.33	0.53

Unit Mounting Description: The unit was rigid-base mounted to the shake table interface plate with (6) 3/8" Grade 5 bolts spaced at 25" in length and 29" in depth on center. For each mounting bolt, a 1" diameter carbon steel pipe was placed under the channel and the mounting bolt was passed through the pipe for support.

BY: Timothy J. Piland



Overall photograph of UUT1

UNIT UNDER TEST (UUT) Summary Sheet



UUT2

DCL Repot Number: 81973-1301

Manufacturer: Filtrine

Product Line: PCP Closed Loop Process Liquid Chillers

Model Number: PCP-3000-330A-WP-OSP

Product Construction Summary: Cabinet constructed of anodized aluminum panels with stainless steel corner legs and top on a welded angle iron frame. Welded stainless steel cooling tank shell and immersion coil evaporator. Stainless steel centrifugal pump mounted on rubber pads over a stainless steel condensation tray.

Options / Component Summary: Rigid base mounted. The unit was a weather-resistant, air-cooled model for outdoor installation and contained compressors, condenser, evaporator, pump, fan, motor and control transformer.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.

UUT Properties

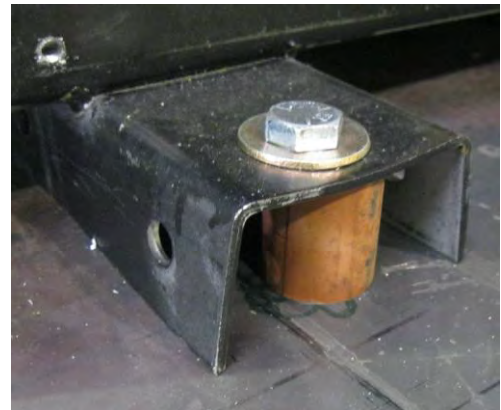
Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Length	Depth	Height	Front-Back	Side-Side	Vertical
5,420	140	52	85	4.8	3.8	6.3

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	H _r	R _μ	I _p	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2025	ICC-ES AC156	1.60	1.0	3.5	1.3	1.5	2.56	1.92	N/A	N/A
		1.60	0.0	1.0	1.0		N/A	N/A	1.07	0.43

Unit Mounting Description: The unit was rigid-base mounted to the shake table interface plate with (10) 1/2" Grade 5 bolts spaced at 32" in length and 54" in depth on center. For each mounting bolt, a 1" diameter carbon steel pipe was placed under the channel and the mounting bolt was passed through the pipe for support.

BY: Timothy J. Piland



Overall photograph of UUT2