



**DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION  
FACILITIES DEVELOPMENT DIVISION**

**APPLICATION FOR HCAI SPECIAL SEISMIC  
CERTIFICATION PREAPPROVAL (OSP)**

OFFICE USE ONLY

**APPLICATION #: OSP-0758**

**HCAI Special Seismic Certification Preapproval (OSP)**

Type:  New  Renewal

**Manufacturer Information**

Manufacturer: Advanced Cooling Technologies, Inc.

Manufacturer's Technical Representative: Cathy He

Mailing Address: 3151 Independence Drive, Livermore, CA 94551

Telephone: (925) 393-0780

Email: cathy.he@advancedcoolingtech.com

**Product Information**

Product Name: Chillers

Product Type: Chillers - Air Cooled

Product Model Number: See Attachment

General Description: Air cooled chiller containing condensers, evaporators, pumps, compressors, and controller.

Mounting Description: Nitrile Butadiene Rubber Vibration Isolated, Floor 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: Dynamic Certification Laboratories

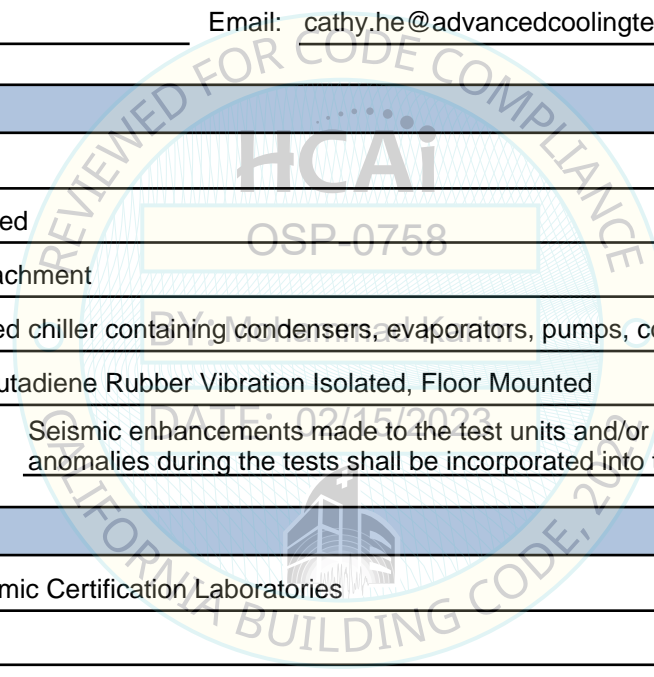
Contact Person: Kelly Laplace

Mailing Address: 1315 Greg Parkway #109, Sparks, NV 89431

Telephone: (775) 358-5085

Email: kelly@shaketest.com

Title: Business Manager





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

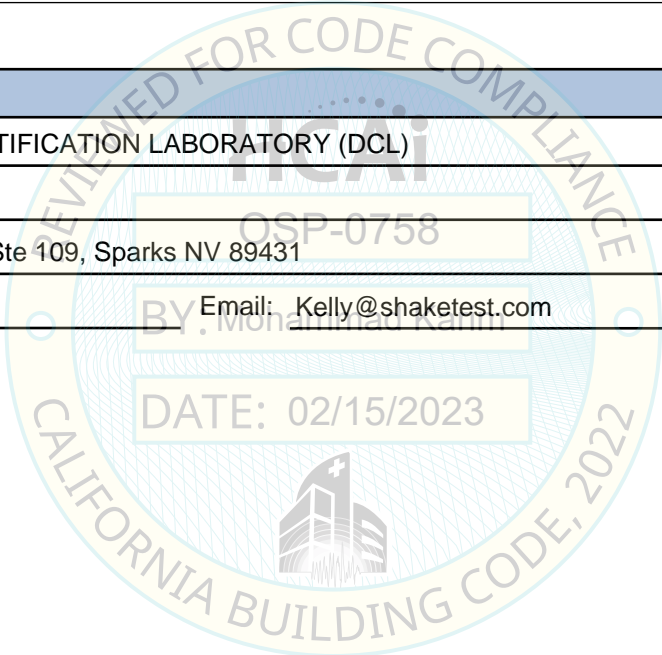
Company Name: THE VMC GROUP  
Name: Kenneth Tarlow California License Number: S2851  
Mailing Address: 980 9th Street, 16th Floor, Sacramento, CA 95814  
Telephone: (832) 627-2214 Email: ken.tarlow@thevmcgroup.com

**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: Kelly Laplace  
Mailing Address: 1315 Greg St., Ste 109, Sparks NV 89431  
Telephone: (775) 358-5085 Email: Kelly@shaketest.com





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**Seismic Parameters**

Design Basis of Equipment or Components ( $F_p/W_p$ ) = 3.6 (Sds=2.0g, z/h=1.0); 1.5 (Sds=2.5g, z/h=0.0)

SDS (Design spectral response acceleration at short period, g) = Sds 2.0g, z/h=1; Sds 2.5g, z/h=0

$a_p$  (Amplification factor) = 2.5

$R_p$  (Response modification factor) = 2.5

$\Omega_0$  (System overstrength factor) = 2.0

$I_p$  (Importance factor) = 1.5

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

Natural frequencies (Hz) = See Attachment

Overall dimensions and weight = See Attachment

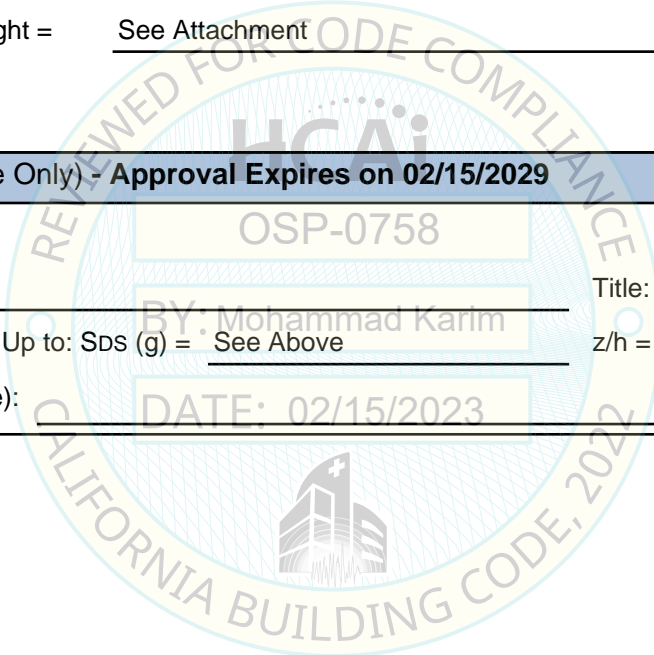
**HCAI Approval (For Office Use Only) - Approval Expires on 02/15/2029**

Date: 02/15/2023

Name: Mohammad Karim Title: Supervisor, Health Facilities

Special Seismic Certification Valid Up to: SDS (g) = See Above z/h = See Above

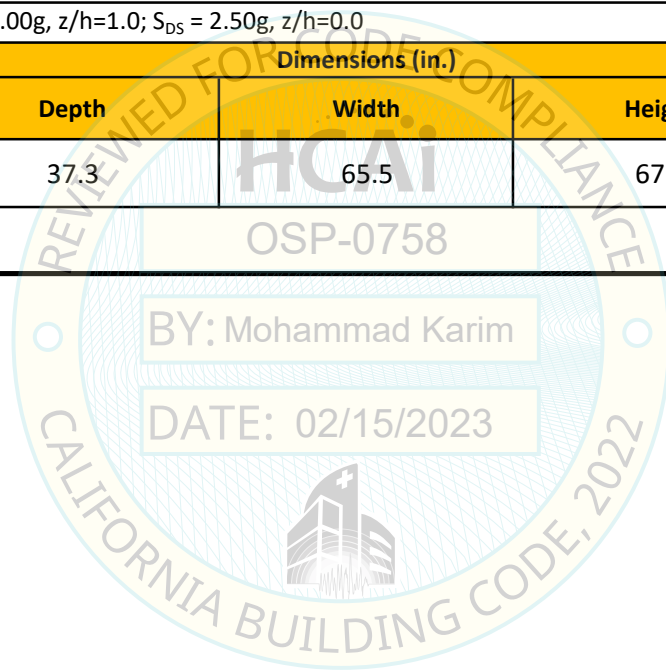
Condition of Approval (if applicable): DATE: 02/15/2023



**Special Seismic Certification**  
**Table 1 - Certified Component**



<b>DCL Project Number:</b>		10322-2201			
<b>Manufacturer:</b>	AIRSYS Refrigeration Engineering Technology (Beijing) Co., Ltd., designed for Advanced Cooling Technologies, Inc.				
<b>Product Line:</b>	MEDICOOL/CH.30E2P4.R410.M				
<b>Mounting Configuration:</b>	Flexible Base Mount (Nitrile Butadiene Rubber Pads)				
<b>Certified Seismic Levels:</b>	$S_{DS} = 2.00g, z/h=1.0; S_{DS} = 2.50g, z/h=0.0$				
Model Number	Dimensions (in.)			Weight (lb.)	Unit
	Depth	Width	Height		
CH.30E2P4.R410.M	37.3	65.5	67.0	1,440	UUT-01
Note: 1. Manufacturing Process is ISO 9001 Certified					



# Special Seismic Certification

## Table 2 - Certified Subcomponents



DCL Project Number: 10322-2201

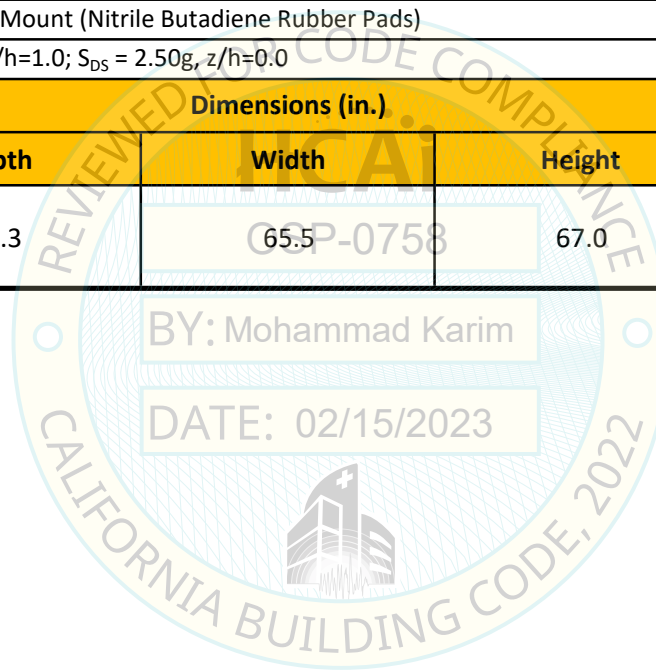
Certified Seismic Levels:  $S_{DS} = 2.00g, z/h=1.0; S_{DS} = 2.50g, z/h=0.0$

Manufacturer Model Number	Manufacturer	Description	Material	Unit
C-SBP170H38B	Panasonic	Scroll Compressor, 7.2 kW	Iron and Copper	UUT-01
C62L-EZB-22	Danfoss	40-70 L/min, Plate-Type Evaporator	Stainless Steel	UUT-01
MHI204	Wilo	40 mH <sub>2</sub> O Pump, 1.5 kW	Iron/Copper/Aluminum/Stainless Steel	UUT-01
8156513260	AIRSYS	Condenser; Copper Tube, 9.52 mm diameter	Copper/Aluminum	UUT-01
2040329530	AIRSYS	Controller Unit	Iron/Copper/Plastic	UUT-01
8251006340	Dunli	Fan Unit	Stainless Steel/Carbon Steel/Plastic/Aluminum	UUT-01
8155412270	Carel	Expansion Valve	Copper/Carbon Steel/Plastic	UUT-01

**Special Seismic Certification**  
**Table 3 - Tested Unit**



<b>DCL Project Number:</b>	10322-2201				
<b>Manufacturer:</b>	AIRSYS Refrigeration Engineering Technology (Beijing) Co., Ltd., designed for Advanced Cooling Technologies, Inc.				
<b>Product Line:</b>	MEDICOOL/CH.30E2P4.R410.M				
<b>Mounting Configuration:</b>	Flexible Base Mount (Nitrile Butadiene Rubber Pads)				
<b>Certified Seismic Levels:</b>	$S_{DS} = 2.00g, z/h=1.0; S_{DS} = 2.50g, z/h=0.0$				
Model Number	Dimensions (in.)			Weight (lb.)	Unit
	Depth	Width	Height		
CH.30E2P4.R410.M	37.3	65.5	67.0	1,440	UUT-01





# UUT-01

## DCL Test Report 10322-2201

### UNIT UNDER TEST (UUT) Summary Sheet



DCL Project Number: 10322-2201

Manufacturer: AIRSYS Refrigeration Engineering Technology (Beijing) Co., Ltd., designed for Advanced Cooling Technologies, Inc.

Product Line: MEDICOOL/CH.30E2P4.R410.M

Model Number: CH.30E2P4.R410.M

Product Construction Summary: Painted Carbon Steel

Options / Component Summary: Compressors, evaporators, pumps, condensers and controller .

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

#### UUT Properties

Operating Weight (lb)	Dimensions (in)				Lowest Natural Frequency (Hz)		
	UUT	Length	Width	Height	Front-Back	Side-Side	Vertical
1,440	UUT-01	37.3	65.5	67.0	16.0	6.0	30.0

#### Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	N/A	N/A
		2.50	0.0		N/A	N/A	1.67	0.67

#### Unit Mounting Description:

UUT-01 was flexibly base-mounted to the steel shake table interface plate with (4) Grade 8 5/8" bolts, flat washers, and manufacturer-supplied 4.0" x 4.0" x 0.8" nitrile butadiene rubber pads with a part number of 8254500670 manufactured by AIRSYS. The bolts were spaced 51" on-center in the X-direction and 33" on-center in the Y-direction using the manufacturer-provided channels at the base of the unit.



UUT-01 Overall View