



**OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT  
FACILITIES DEVELOPMENT DIVISION**

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

OFFICE USE ONLY

**APPLICATION #: OSP-0048**

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

Type:  New  Renewal

**Manufacturer Information**

Manufacturer: ClimaCool Corp.

Manufacturer's Technical Representative: Juan Paul French

Mailing Address: 15 S. Virginia Avenue, Oklahoma City, OK 73106

Telephone: (405) 815-3000

Email: jfrench@climacoolcorp.com

**Product Information**

Product Name: Chillers

Product Type: Chillers - Water Cooled

Product Model Number: UCW/H030, UCW/H050, UCW/H070, and CoolLogic Master Control Panel

General Description: Modular Chillers and Master Control Panel

Mounting Description: Chillers: rigid base mounted and vibration spring isolated. Master Control Panel: rigid wall 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: BUEHLER

Contact Person: Scott Hooker

Mailing Address: 600 Q Street, Sacramento, CA 95811

Telephone: (405) 815-0311

Email: shooker@buehlerengineering.com

Title: \_\_\_\_\_





**OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT  
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**California Licensed Structural Engineer Responsible for the Engineering and Test Report(s)**

Company Name: BUEHLER  
Name: Scott Hooker California License Number: S3937  
Mailing Address: 600 Q St., Suite 200, Sacramento, CA 95811  
Telephone: (916) 443-0303 Email: shooker@bbse.com

**Certification Method**

GR-63-Core       ICC-ES AC156       IEEE 344       IEEE 693       NEBS 3  
 Other (Please Specify): \_\_\_\_\_

**Testing Laboratory**

Company Name: QUALTECH/CURTISS WRIGHT/TRENTEC  
Contact Person: Jason VonNida  
Mailing Address: 4600 East Tech Drive, Cincinnati OH 45245  
Telephone: (513) 292-2139 Email: jvonnida@curtisswright.com





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**Seismic Parameters**

Design Basis of Equipment or Components ( $F_p/W_p$ ) = 1.39 / 4.34 (Chiller - Rigid / Isolated), 1.45 (Control Box)

SDS (Design spectral response acceleration at short period, g) = 1.93

$a_p$  (Amplification factor) = 1.0/2.5 (Chiller-Rigid/Isolated), 2.5 (Control Box)

$R_p$  (Response modification factor) = 2.5/2.0 (Chiller-Rigid/Isolated), 6.0 (Control Box)

$\Omega_0$  (System overstrength factor) = 2.0

$I_p$  (Importance factor) = 1.5

$z/h$  (Height ratio factor) = 1

Natural frequencies (Hz) = see attached UUT sheets

Overall dimensions and weight = see attached Table 1

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

Date: 7/21/2021

Name: William Staehlin Title: Senior Structural Engineer

Special Seismic Certification Valid Up to: SDS (g) = 1.93 z/h = 1

Condition of Approval (if applicable): DATE: 07/21/2021





**Table 1A. Certified Product List**

UCW/H Water Cooled Modular Chiller  
Mounting: Rigid Base Mount or Spring Isolators

Model Number <sup>2</sup>	Nominal Capacity	Tested/ Interpolated	Length (in)	Width (in)	Height (in)	Operating Weight (lbs) <sup>1</sup>
UCW030AHASACMOS	30 ton	UUT-1	55 1/2	34 1/4	65 1/8	1,480
UCH030A(H, F or N)ASAH(B, E or M)OE	30 ton	interpolated	55 1/2	34 1/4	65 1/8	1,480
UCW030A(H, F or N)ASAC(B, E or M)OE	30 ton	interpolated	55 1/2	34 1/4	65 1/8	1,480
UCH050A(H, F or N)ASAH(B, E or M)OE	50 ton	interpolated	55 1/2	34 1/4	65 1/8	2,200
UCW050A(H, F or N)ASAC(B, E or M)OE	50 ton	interpolated	55 1/2	34 1/4	65 1/8	2,200
UCH070A(H, F or N)ASAH(B, E or M)OE	70 ton	interpolated	55 1/2	34 1/4	65 1/8	2,450
UCW070A(H, F or N)ASAC(B, E or M)OE	70 ton	interpolated	55 1/2	34 1/4	65 1/8	2,450
UCW070AFASACMOS	70 ton	UUT-2	55 1/2	34 1/4	65 1/8	2,450

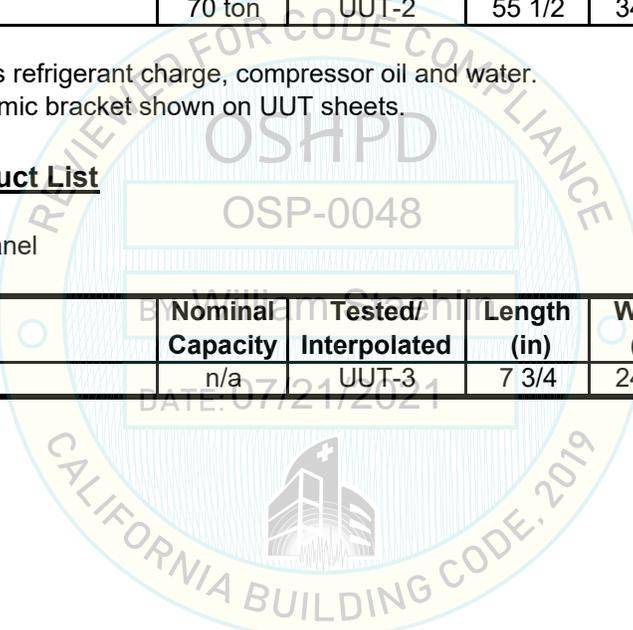
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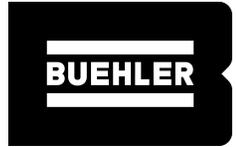
1. Operability weight includes refrigerant charge, compressor oil and water.
2. Certified units require seismic bracket shown on UUT sheets.

**Table 1B. Certified Product List**

CoreLogic Master Control Panel  
Mounting: Wall Mount

Model Number	Nominal Capacity	Tested/ Interpolated	Length (in)	Width (in)	Height (in)	Operating Weight (lbs)
S10S0261N01	n/a	UUT-3	7 3/4	24 1/2	24 1/4	50





**Table 2A. Certified Sub-Component List**

UCW/H Water Cooled Modular Chiller

Mounting: Rigid Base Mount or Spring Isolators

<b>Compressor</b>						
Part Number	Weight (lb)	Nominal capacity of Sub-Comp	Voltage	Manufacturer	Material	Tested / Interpolated
ZP182KCE	146	15 tons	208/230-460-575	Copeland	Carbon Steel/Copper	UUT-1
ZP385KCE	390	35 tons	208/230-460-575	Copeland	Carbon Steel/Copper	UUT-2

Compressor wiring to match unit voltage (208/230V, 460V or 575V). Compressors with different voltages are substantially similar in regards to support, mass, manufacture and material; the only revisions is input voltage.

<b>Condenser Braze Plate Heat Exchanger</b>						
Part Number	Weight (lb)	Nominal capacity	Manufacturer	Material	Material	Tested / Interpolated
ACH-230DQ-166H	157	30 tons	Alfa Laval	Stainless Steel 316/Copper		UUT-1
ACH-500DQ-142H	293	50 tons	Alfa Laval	Stainless Steel 316/Copper		interpolated
ACH-500DQ-166H	337	70 tons	Alfa Laval	Stainless Steel 316/Copper		UUT-2

<b>Evaporator Braze Plate Heat Exchanger</b>						
Part Number	Weight (lb)	Nominal capacity	Manufacturer	Material	Material	Tested / Interpolated
ACH-230DQ-142H	136	30 tons	Alfa Laval	Stainless Steel 316/Copper		UUT-1
ACH-500DQ-118H	247	50 tons	Alfa Laval	Stainless Steel 316/Copper		interpolated
ACH-500DQ-142H	293	70 tons	Alfa Laval	Stainless Steel 316/Copper		UUT-2

<b>Cabinet Assembly</b>						
Part Number	Weight (lb)	Nominal capacity	Manufacturer	Material	Material	Tested / Interpolated
83P0201N02	309	n/a	Climate Master	Galvanized Steel		UUT-1
83P0201N01	313	n/a	Climate Master	Galvanized Steel		UUT-2

<b>Seismic Kit Assembly</b>						
Part Number	Weight (lb)	Nominal capacity	Manufacturer	Material	Material	Tested / Interpolated
83K0119N01	42.4 lbs	n/a	Climate Master	Galvanized Steel		UUT-1 & 2

<b>Header Tube Assembly</b>						
Part Number	Weight (lb)	Nominal capacity	Manufacturer	Material	Material	Tested / Interpolated
C28B0001N01	196	n/a	Sharp Iron LLC	Schedule 40 Steel		UUT-1 & 2

**Table 2B. Certified Sub-Component List**

CoreLogic Master Control Panel

Mounting: Wall Mount

<b>Control Box Assembly</b>						
Part Number	Weight (lb)	Manufacturer	Material	Material	Material	Tested / Interpolated
S10S0261N01	50	ClimaCool	Galvanized Steel / Electrical Components			UUT-3

**Exception:** Components exempt from certification requirements by exception to CBC Section 1705.13.3.1 need not be listed



**UUT-1A Test Summary**

Testing Lab: Curtiss-Wright  
Testing Report: Q0005.00  
Testing Unit Num: test 2: Q0005-01-01-01

Model Number	Nominal Capacity	Measured Operating Weight (lbs)	Mounting	Excitation Direction	Frequency (Hz)	Length (in)	Width (in)	Height (in)	
UCW030AHASACMOS	30 ton	1,480	Rigid Base Mount	X	Front-Back	11.1	55 1/2	34 1/4	65 1/8
				Y	Side-Side	13.1			
				Z	Vertical	22.0			

Notes: Frequencies are for units prior to ICC ES AC-156 testing.  
Model Number is based on nomenclature from the Rev.: 9/15 Catalog. Refer to Nomenclature.

Attachment Method	Six (6) 5/8"Ø grade 8 bolts with 1 1/2"Ø oversized washer and beveled flat washers to C6x13 test fixture.	Seismic Parameters					
		Building Code	Test Criteria	S <sub>Ds</sub> (g)	z/h	Horizontal	Vertical
Test Anomaly	none	CBC 2019	AC 156	1.93	1.0	A <sub>FLX-H</sub> 3.09g A <sub>RIG-H</sub> 2.32g	A <sub>FLX-V</sub> 1.29g A <sub>RIG-V</sub> 0.51g



Figure 1A.1: Unit on the shake table

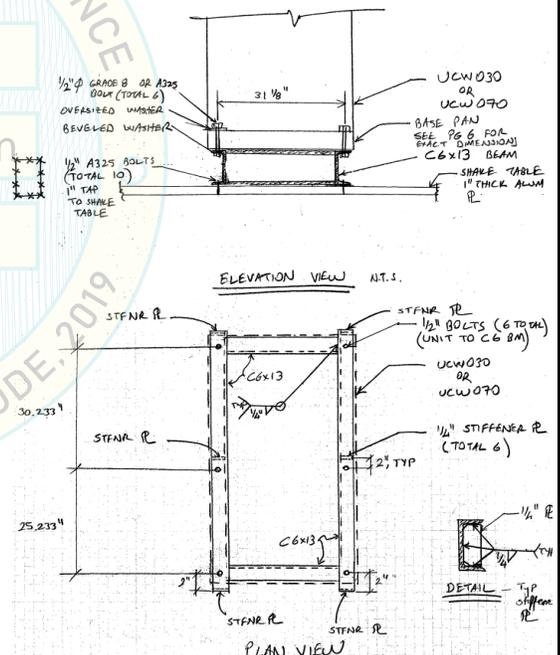


Figure 1A.2: Mounting Detail

Notes: The UUTs were full of contents during the test.  
Unit maintained structural integrity and remained functional per manufacture requirements after shake table test

**UUT-1A Summary Tested Sub-Component**

Sub-Component	Weight	Part Number	Manufacturer	Material
Compressor	146 lbs	ZP182KCE	Copeland	Carbon Steel/Copper
Condenser Braze Plate Heat Exchanger	157 lbs	ACH-230DQ-166H	Alfa Laval	Stainless Steel 316/Copper
Evaporator Braze Plate Heat Exchanger	136 lbs	ACH-230DQ-142H	Alfa Laval	Stainless Steel 316/Copper
Cabinet Assembly	309 lbs	83P0201N02	Climate Master	Galvanized Steel
Seismic Kit Assembly	42 lbs	83K0119N01	Climate Master	Galvanized Steel
Header Tube Assembly	196 lbs	C28B0001N01	Sharp Iron LLC	Schedule 40 Steel

**UUT-1B Test Summary**

Testing Lab:	Curtiss-Wright
Testing Report:	Q0005.00
Testing Unit Num:	test 2: Q0005-01-01-01

Model Number	Nominal Capacity	Measured Operating Weight (lbs)	Mounting	Excitation Direction	Frequency (Hz)	Length (in)	Width (in)	Height (in)	
UCW030AHASACMOS	30 ton	1,480	Rigid Base Mount	X	Front-Back	1.3	55 1/2	34 1/4	65 1/8
				Y	Side-Side	1.3			
				Z	Vertical	7.6			

Notes: Frequencies are for units prior to ICC ES AC-156 testing.  
Model Number is based on nomenclature from the Rev.: 9/15 Catalog. Refer to Nomenclature.

Attachment Method Six (6) 5/8"Ø grade 8 bolts with 1 1/2"Ø oversized washer and beveled flat washers to C6x13 test fixture. Fixture welded with two (2) - 4 inch length 5/16" fillet weld to four (4) Mason Spring Isolators (SLRS04).	Seismic Parameters					
	Building Code	Test Criteria	S <sub>Ds</sub> (g)	z/h	Horizontal	Vertical
Test Anomaly	none	CBC 2019	AC 156	1.93	1.0	A <sub>FLX-H</sub> 3.09g, A <sub>ARIG-H</sub> 2.32g, A <sub>FLX-V</sub> 1.29g, A <sub>ARIG-V</sub> 0.51g



Figure 1B.1: Unit on the shake table

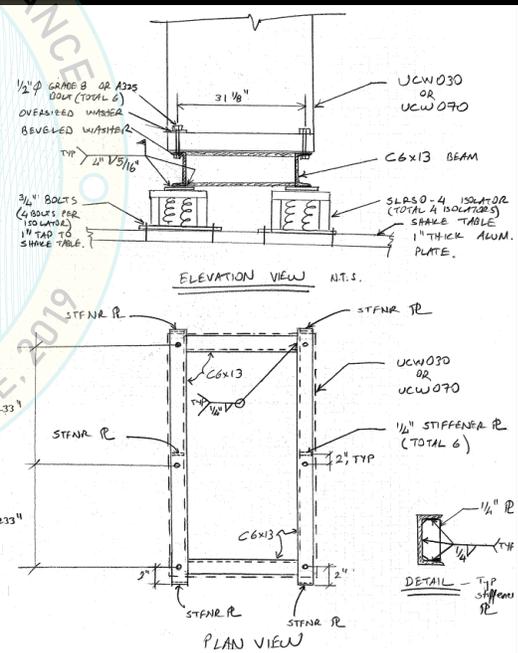


Figure 1B.2: Mounting Detail

Notes: The UUTs were full of contents during the test.  
Unit maintained structural integrity and remained functional per manufacture requirements after shake table test

**UUT-1B Summary Tested Sub-Component**

Sub-Component	Weight	Part Number	Manufacturer	Material
Compressor	146 lbs	ZP182KCE	Copeland	Carbon Steel/Copper
Condenser Braze Plate Heat Exchanger	157 lbs	ACH-230DQ-166H	Alfa Laval	Stainless Steel 316/Copper
Evaporator Braze Plate Heat Exchanger	136 lbs	ACH-230DQ-142H	Alfa Laval	Stainless Steel 316/Copper
Cabinet Assembly	309 lbs	83P0201N02	Climate Master	Galvanized Steel
Seismic Kit Assembly	42 lbs	83K0119N01	Climate Master	Galvanized Steel
Header Tube Assembly	196 lbs	C28B0001N01	Sharp Iron LLC	Schedule 40 Steel

**UUT-2A Test Summary**

Testing Lab: Curtiss-Wright  
Testing Report: Q0005.00  
Testing Unit Num: test 3: Q0005-02-01-01

Model Number	Nominal Capacity	Measured Operating Weight (lbs)	Mounting	Excitation Direction	Frequency (Hz)	Length (in)	Width (in)	Height (in)	
UCW070AFASACMOS	70 ton	2,450	Rigid Base Mount	X	Front-Back	8.9	55 1/2	34 1/4	65 1/8
				Y	Side-Side	7.1			
				Z	Vertical	22.8			

Notes: Frequencies are for units prior to ICC ES AC-156 testing.  
Model Number is based on nomenclature from the Rev.: 9/15 Catalog. Refer to Nomenclature.

Attachment Method	Six (6) 5/8"Ø grade 8 bolts with 1 1/2"Ø oversized washer and beveled flat washers to C6x13 test fixture.	Seismic Parameters							
		Building Code	Test Criteria	S <sub>Ds</sub> (g)	z/h	Horizontal		Vertical	
Test Anomaly	none	CBC 2019	AC 156	1.93	1.0	A <sub>FLX-H</sub>	A <sub>RI-G-H</sub>	A <sub>FLX-V</sub>	A <sub>RI-G-V</sub>
						3.09g	2.32g	1.29g	0.51g



Figure 2A.1: Unit on the shake table

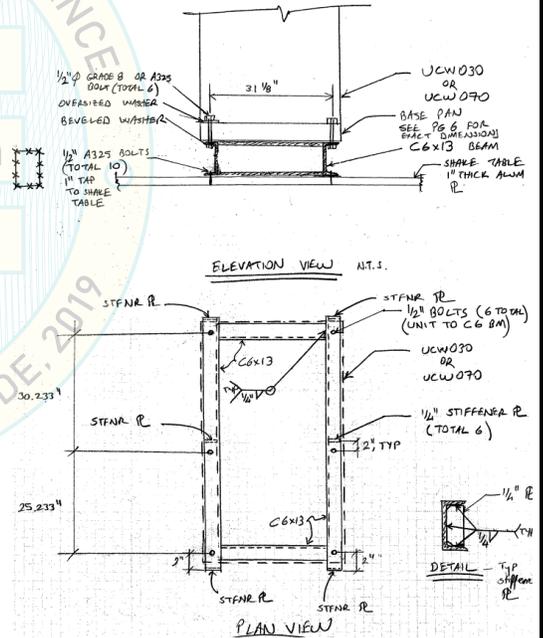


Figure 2A.2: Mounting Detail

Notes: The UUTs were full of contents during the test.  
Unit maintained structural integrity and remained functional per manufacture requirements after shake table test

**UUT-2A Summary Tested Sub-Component**

Sub-Component	Weight	Part Number	Manufacturer	Material
Compressor	390 lbs	ZP385KCE	Copeland	Carbon Steel/Copper
Condenser Braze Plate Heat Exchanger	337 lbs	ACH-500DQ-166H	Alfa Laval	Stainless Steel 316/Copper
Evaporator Braze Plate Heat Exchanger	293 lbs	ACH-500DQ-142H	Alfa Laval	Stainless Steel 316/Copper
Cabinet Assembly	313 lbs	83P0201N01	Climate Master	Galvanized Steel
Seismic Kit Assembly	42 lbs	83K0119N01	Climate Master	Galvanized Steel
Header Tube Assembly	196 lbs	C28B0001N01	Sharp Iron LLC	Schedule 40 Steel

**UUT-2B Test Summary**

Testing Lab:	Curtiss-Wright
Testing Report:	Q0005.00
Testing Unit Num:	test 3: Q0005-02-01-01

Model Number	Nominal Capacity	Measured Operating Weight (lbs)	Mounting	Excitation Direction	Frequency (Hz)	Length (in)	Width (in)	Height (in)	
UCW070AFASACMOS	70 ton	2,450	Rigid Base Mount	X	Front-Back	1.9	55 1/2	34 1/4	65 1/8
				Y	Side-Side	1.3			
				Z	Vertical	7.0			

Notes: Frequencies are for units prior to ICC ES AC-156 testing.  
Model Number is based on nomenclature from the Rev.: 9/15 Catalog. Refer to Nomenclature.

Attachment Method	Six (6) 5/8"Ø grade 8 bolts with 1 1/2"Ø oversized washer and beveled flat washers to C6x13 test fixture. Fixture welded with two (2) - 4 inch length 5/16" fillet weld to four (4) Mason Spring Isolators (SLRS04).	Seismic Parameters																				
Test Anomaly	none	<table border="1"> <thead> <tr> <th rowspan="2">Building Code</th> <th rowspan="2">Test Criteria</th> <th rowspan="2">S<sub>Ds</sub> (g)</th> <th rowspan="2">z/h</th> <th colspan="2">Horizontal</th> <th colspan="2">Vertical</th> </tr> <tr> <th>A<sub>FLX-H</sub></th> <th>A<sub>ARIG-H</sub></th> <th>A<sub>FLX-V</sub></th> <th>A<sub>ARIG-V</sub></th> </tr> </thead> <tbody> <tr> <td>CBC 2019</td> <td>AC 156</td> <td>1.93</td> <td>1.0</td> <td>3.09g</td> <td>2.32g</td> <td>1.29g</td> <td>0.51g</td> </tr> </tbody> </table>	Building Code	Test Criteria	S <sub>Ds</sub> (g)	z/h	Horizontal		Vertical		A <sub>FLX-H</sub>	A <sub>ARIG-H</sub>	A <sub>FLX-V</sub>	A <sub>ARIG-V</sub>	CBC 2019	AC 156	1.93	1.0	3.09g	2.32g	1.29g	0.51g
Building Code	Test Criteria	S <sub>Ds</sub> (g)					z/h	Horizontal		Vertical												
			A <sub>FLX-H</sub>	A <sub>ARIG-H</sub>	A <sub>FLX-V</sub>	A <sub>ARIG-V</sub>																
CBC 2019	AC 156	1.93	1.0	3.09g	2.32g	1.29g	0.51g															



Figure 2B.1: Unit on the shake table

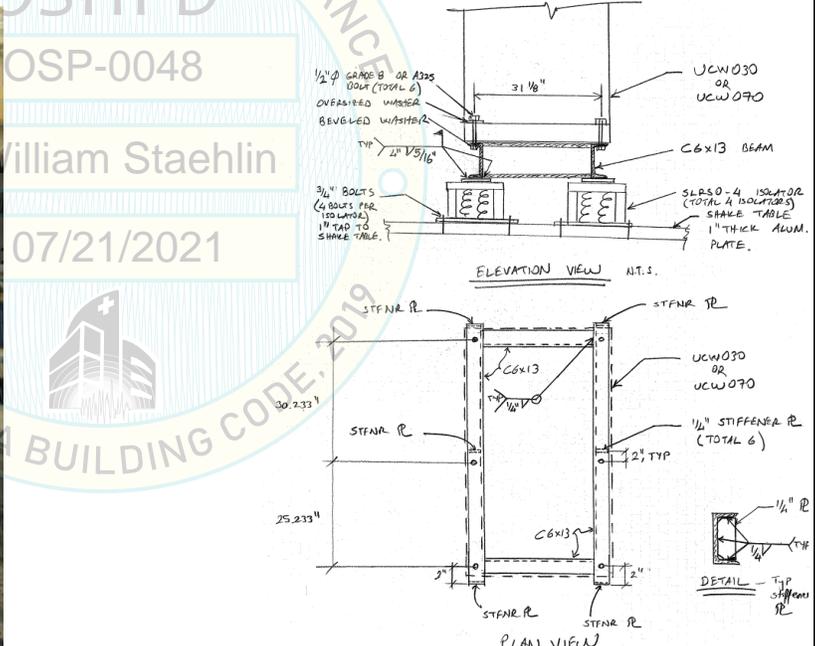


Figure 2B.2: Mounting Detail

Notes: The UUTs were full of contents during the test.  
Unit maintained structural integrity and remained functional per manufacture requirements after shake table test

**UUT-2B Summary Tested Sub-Component**

Sub-Component	Weight	Part Number	Manufacturer	Material
Compressor	390 lbs	ZP385KCE	Copeland	Carbon Steel/Copper
Condenser Braze Plate Heat Exchanger	337 lbs	ACH-500DQ-166H	Alfa Laval	Stainless Steel 316/Copper
Evaporator Braze Plate Heat Exchanger	293 lbs	ACH-500DQ-142H	Alfa Laval	Stainless Steel 316/Copper
Cabinet Assembly	313 lbs	83P0201N01	Climate Master	Galvanized Steel
Seismic Kit Assembly	42 lbs	83K0119N01	Climate Master	Galvanized Steel
Header Tube Assembly	196 lbs	C28B0001N01	Sharp Iron LLC	Schedule 40 Steel

**UUT-3 Test Summary**

Testing Lab:	Curtiss-Wright
Testing Report:	Q0005.00
Testing Unit Num:	test 1: Q0005-03-01-01

Model Number	Nominal Capacity	Measured Operating Weight (lbs)	Mounting	Excitation Direction	Frequency (Hz)	Length (in)	Width (in)	Height (in)	
S10S0261N01	n/a	50	Wall Mount	X	Front-Back	n/a	7 3/4	24 1/2	24 1/4
				Y	Side-Side	n/a			
				Z	Vertical	n/a			

Notes: Frequencies are for units prior to ICC ES AC-156 testing.  
Model Number is based on nomenclature from the Rev.: 9/15 Catalog. Refer to Nomenclature.

Attachment Method	Eight (8) 1/4"Ø bolts to 1/8" thick test fixture with lock and flat washers snug tight.	Seismic Parameters							
		Building Code	Test Criteria	S <sub>DS</sub> (g)	z/h	Horizontal		Vertical	
Test Anomaly	none	CBC 2019	AC 156	1.93	1.0	A <sub>FLX-H</sub>	A <sub>RIG-H</sub>	A <sub>FLX-V</sub>	A <sub>RIG-V</sub>
						3.09g	2.32g	1.29g	0.51g



Figure 3.1: Unit on the shake table

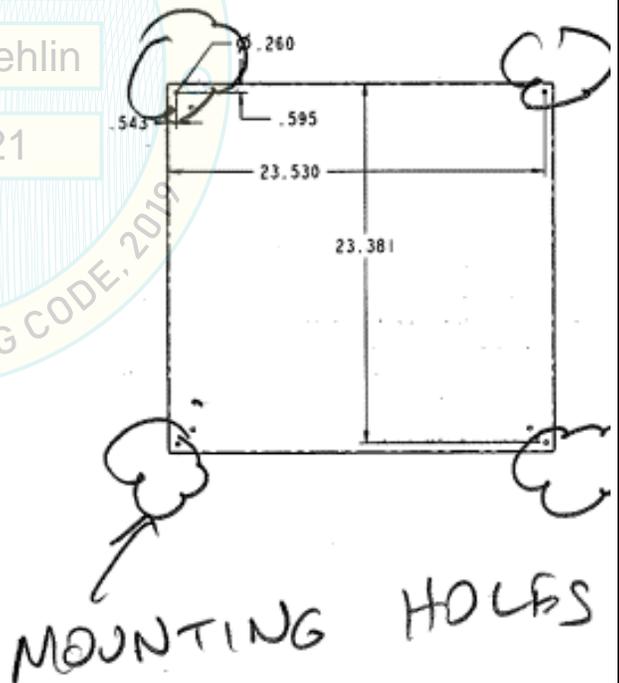


Figure 3.2: Mounting Detail

Notes: The UUTs were full of contents during the test.  
Unit maintained structural integrity and remained functional per manufacture requirements after shake table test

**UUT-3 Summary Tested Sub-Component**

Sub-Component	Weight	Part Number	Manufacturer	Material
Control Panel	50	S10S0261N01	ClimaCool	Galvanized Steel / Electrical Components