



DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION  
FACILITIES DEVELOPMENT DIVISION

APPLICATION FOR HCAI SPECIAL SEISMIC  
CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY

APPLICATION #: OSP-0374

HCAI Special Seismic Certification Preapproval (OSP)

Type:  New  Renewal

Manufacturer Information

Manufacturer: Johnson Controls

Manufacturer's Technical Representative: Jake Ballentine

Mailing Address: 5000 Renaissance Drive, New Freedom, PA 17349

Telephone: (717) 659-3112

Email: jacob.c.ballentine@jci.com

Product Information

Product Name: Chillers

Product Type: Chillers - Air Cooled

Product Model Number: YLAA/QTC3 Air-Cooled Scroll Chillers with Brazed Plate Heat Exchangers

General Description: Carbon steel air-cooled scroll chillers with brazed plate heat exchangers.

Mounting Description: Spring or Neoprene 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: Manwill Engineering LLC

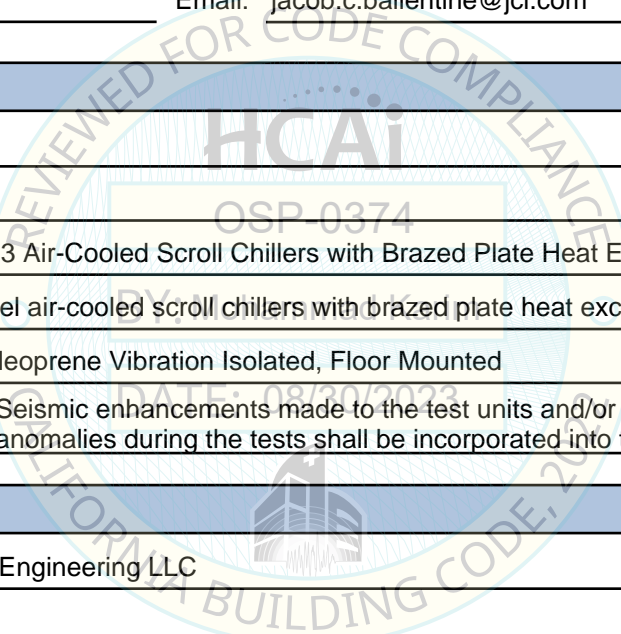
Contact Person: Derek Manwill

Mailing Address: PO Box 1194, Bend, OR 97709

Telephone: (541) 241-2102

Email: derek@manwillSE.com

Title: President





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

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

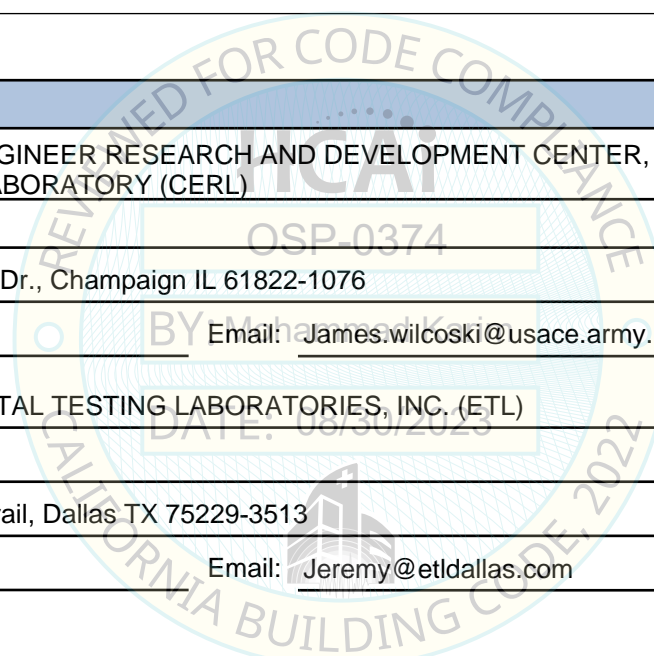
Company Name: MANWILL ENGINEERING LLC  
Name: Derek Manwill California License Number: S6266  
Mailing Address: PO Box 1194, Bend, OR 97709  
Telephone: (541) 241-2102 Email: derek@manwillse.com

**Certification Method**

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

**Testing Laboratory**

Company Name: U.S. ARMY ENGINEER RESEARCH AND DEVELOPMENT CENTER, CONSTRUCTION ENGINEERING RESEARCH LABORATORY (CERL)  
Contact Person: James Wilcoski  
Mailing Address: 2902 Newmark Dr., Champaign IL 61822-1076  
Telephone: (217) 373-6763 Email: James.wilcoski@usace.army.mil  
Company Name: ENVIRONMENTAL TESTING LABORATORIES, INC. (ETL)  
Contact Person: Jeremy Lange  
Mailing Address: 11034 Indian Trail, Dallas TX 75229-3513  
Telephone: (972) 247-9657 Email: Jeremy@etldallas.com





**DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION  
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**Seismic Parameters**

Design Basis of Equipment or Components ( $F_p/W_p$ ) = 4.50 (SDS=2.00, z/h=1), 1.88 (SDS=2.50, z/h=0)

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

$a_p$  (Amplification factor) = 2.5

$R_p$  (Response modification factor) = 2.0

$\Omega_0$  (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

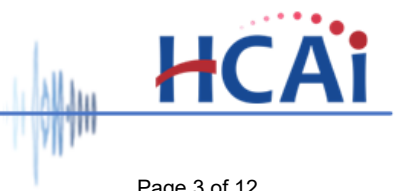
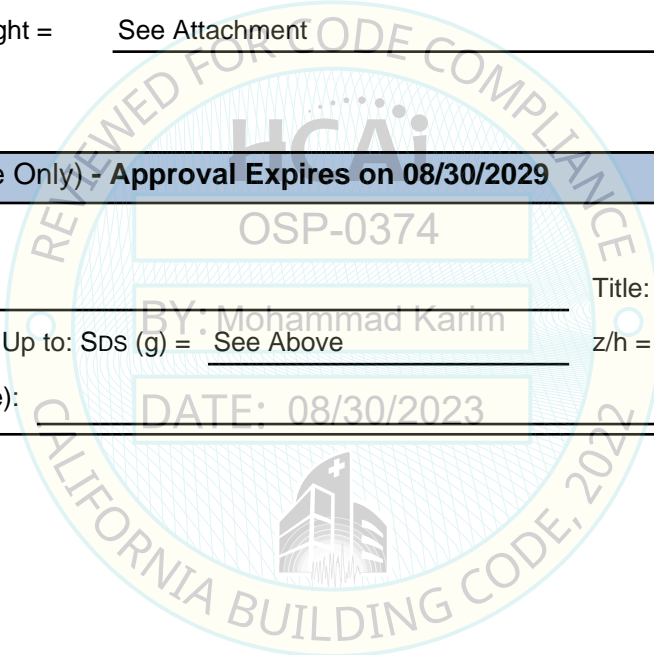
**HCAI Approval (For Office Use Only) - Approval Expires on 08/30/2029**

Date: 8/30/2023

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: 08/30/2023



**JOHNSON CONTROLS**  
**YLAA/QTC3 Air-Cooled Scroll Chillers with Brazed Plate Heat Exchangers**

**TABLE 1. YLAA**

Model Number	Dimensions (in)			Max. Wt. (lb)	Description / Notes	Basis
	Depth	Width	Height			
<b>YLAA</b>						
YLAA0041***X	100.2	93.7	94.2	3,877	-	EXTRAP
YLAA0048***X	100.2	93.7	94.2	3,754	-	EXTRAP
YLAA0048H46X	100.2	93.7	94.2	3,900	-	<b>UUT 4</b>
YLAA0058***X	104.1	93.7	94.2	5,132	-	INTERP
YLAA0065***X	104.1	93.7	94.2	5,369	-	INTERP
YLAA0070S46X	120.0	93.7	94.2	5,292	-	<b>UUT 2</b>
YLAA0070***X	120.0	93.7	94.2	5,292	-	INTERP
YLAA0080***X	120.0	93.7	94.2	5,652	-	INTERP
YLAA0081***X	104.1	93.7	94.2	5,839	-	INTERP
YLAA0082***X	104.1	93.7	94.2	5,876	-	INTERP
YLAA0089/90***X	120.0	93.7	94.2	5,967	-	INTERP
YLAA0091/92***X	146.6	93.7	94.2	6,551	-	INTERP
YLAA0100***X	146.6	93.7	94.2	6,648	-	INTERP
YLAA0101***X	146.6	93.7	94.2	6,836	-	INTERP
YLAA0115***X	146.6	93.7	94.2	6,935	-	INTERP
YLAA0120***X	146.6	93.7	94.2	7,153	-	INTERP
YLAA0125***X	191.6	93.7	94.2	7,838	-	INTERP
YLAA0135/136***X	191.6	93.7	94.2	8,156	-	INTERP
YLAA0141/142***X	191.6	93.7	94.2	8,319	-	INTERP
YLAA0139***X	191.6	93.7	94.2	8,485	-	INTERP
YLAA0155***X	191.6	93.7	94.2	8,499	-	INTERP
YLAA0156***X	236.6	93.7	94.2	9,444	-	INTERP
YLAA0170***X	236.6	93.7	94.2	9,864	-	INTERP
YLAA0175***X	236.6	93.7	94.2	10,074	-	INTERP
YLAA0175H17X	236.6	93.7	94.2	10,074	-	<b>UUT 1</b>
YLAA0200***X	274.4	93.7	94.2	10,350	-	INTERP
YLAA0230***X	274.4	93.7	94.2	10,900	-	INTERP
YLAA0230H46X	274.4	93.7	94.2	10,900	-	<b>UUT 3</b>

**Mounting:** Isolated floor mounted on spring or neoprene isolators. **Seismic Levels:**  $S_{DS} = 2.00g$  for  $z/h = 1$   
 $S_{DS} = 2.50g$  for  $z/h = 0$   $I_p = 1.5$

**Product Construction:** Painted carbon steel construction.

**Options/Subcomponents:** Available subcomponents are listed in Table 3. Voltage: 200-575V 60Hz. Refrigerant: R-410a or R-454b. Electrical enclosure can be riveted (tested on UUT 1, UUT 2, and UUT 4) or welded (tested on UUT 3). Both designs have the same dimensions, weight, and subcomponents (which are all less than 10-lb).

**Nomenclature:**

-'\*' in position 9 indicates efficiency: 'S' for standard efficiency or 'H' for high efficiency.

-'\*\*\*' in positions 10 and 11 indicates voltage: '17' for 200V, '28' for 230V, '40' for 380V, '46' for 460V, or '58' for 575V.

**JOHNSON CONTROLS**  
**YLAA/QTC3 Air-Cooled Scroll Chillers with Brazed Plate Heat Exchangers**

**TABLE 2. QTC3**

Model Number	Dimensions (in)			Max. Wt. (lb)	Description / Notes	Basis
	Depth	Width	Height			
<b>QTC3</b>						
QTC3040TE**X	100.2	93.7	94.2	3,877	-	EXTRA
QTC3050TE**X	100.2	93.7	94.2	3,754	-	EXTRA
QTC3055TE**X	104.1	93.7	94.2	5,132	-	EXTRA
QTC3060TE**X	104.1	93.7	94.2	5,369	-	EXTRA
QTC3070TE46X	120.0	93.7	94.2	5,292	-	<b>UUT 2</b>
QTC3070TE**X	120.0	93.7	94.2	5,292	-	INTER
QTC3075TE**X	120.0	93.7	94.2	5,652	-	INTER
QTC3079TE**X	120.0	93.7	94.2	5,876	-	INTER
QTC3080TE**X	104.1	93.7	94.2	5,839	-	INTER
QTC3085TE**X	120.0	93.7	94.2	5,967	-	INTER
QTC3090TE**X	146.6	93.7	94.2	6,551	-	INTER
QTC3095TE**X	146.6	93.7	94.2	6,648	-	INTER
QTC3100TE**X	146.6	93.7	94.2	6,836	-	INTER
QTC3110TE**X	146.6	93.7	94.2	7,153	-	INTER
QTC3120TE**X	191.6	93.7	94.2	7,838	-	INTER
QTC3125TE**X	191.6	93.7	94.2	8,156	-	INTER
QTC3130TE**X	191.6	93.7	94.2	8,319	-	INTER
QTC3129TE**X	191.6	93.7	94.2	8,485	-	INTER
QTC3140TE**X	191.6	93.7	94.2	8,499	-	INTER
QTC3150TE**X	236.6	93.7	94.2	9,444	-	INTER
QTC3160TE**X	236.6	93.7	94.2	9,864	-	INTER
QTC3170TE**X	236.6	93.7	94.2	10,074	-	INTER
QTC3170TE17X	236.6	93.7	94.2	10,074	-	<b>UUT 1</b>
QTC3205TE**X	274.4	93.7	94.2	10,350	-	INTER
QTC3225TE**X	274.4	93.7	94.2	10,900	-	INTER
QTC3225TE46X	274.4	93.7	94.2	10,900	-	<b>UUT 3</b>

**Mounting:** Isolated floor mounted on spring or neoprene isolators. **Seismic Levels:**  $S_{DS} = 2.00g$  for  $z/h = 1$   $S_{DS} = 2.50g$  for  $z/h = 0$   $I_p = 1.5$

**Product Construction:** Identical to YLAA; naming/branding is the only difference. Painted carbon steel construction.

**Options/Subcomponents:** Available subcomponents are listed in Table 3. Voltage: 200-575V 60Hz. Refrigerant: R-410a or R-454b. Electrical enclosure can be riveted (tested on UUT 1, UUT 2, and UUT 4) or welded (tested on UUT 3). Both designs have the same dimensions, weight, and subcomponents (which are all less than 10-lb).

**Nomenclature:**

-'\*\*' in positions 10 and 11 indicates voltage: '17' for 200V, '28' for 230V, '40' for 380V, '46' for 460V, or '58' for 575V.

**JOHNSON CONTROLS**  
**YLAA/QTC3 Air-Cooled Scroll Chillers with Brazed Plate Heat Exchangers**

**TABLE 3. SUBCOMPONENTS**

Model Number	Dimensions (in)			Max. Wt. (lb)	Description / Notes	Basis
	Depth	Width	Height			
<b>Subcomponent: Compressor - Manufacturer: Copeland</b>						
ZP120KCE	11.1	11.2	21.7	135	-	EXTRAP
YA122K1E	11.1	11.2	22.0	135	-	EXTRAP
YA154K1E	11.1	11.2	21.7	143	-	EXTRAP
ZP154KCE	11.1	11.2	21.7	143	-	<b>UUT 2,4</b>
ZP182KCE	11.1	11.2	21.7	145	-	INTERP
ZP385KCE	17.6	15.4	28.1	390	-	<b>UUT 1</b>
ZP485KCE	14.5	13.6	29.8	419	-	<b>UUT 3</b>
<b>Subcomponent: Compressor - Manufacturer: Bitzer</b>						
GSD60154V	10.5	9.7	21.9	181	-	<b>UUT 2</b>
GSD60182V	10.5	9.7	21.9	181	-	INTERP
GSD80295V	14.5	13.6	28.0	313	-	INTERP
GSD80421V	14.5	13.6	28.0	316	-	INTERP
GSD80385V	14.5	13.6	28.0	317	-	<b>UUT 1</b>
<b>Subcomponent: Evaporator - Manufacturer: Alfa Laval</b>						
ACH502-90	9.6	12.7	29.1	209	-	EXTRAP
ACH500-102	11.0	12.7	29.1	231	-	<b>UUT 2,4</b>
ACH502-106	11.1	12.7	29.1	238	-	INTERP
ACH502-122	12.7	12.7	29.1	268	-	INTERP
ACH500-126	13.4	12.7	29.1	275	-	INTERP
ACH502-142	14.7	12.7	29.1	305	-	INTERP
ACH502-162	16.7	12.7	29.1	342	-	INTERP
ACH500-166	17.5	12.7	29.1	349	-	INTERP
ACH500-190	20.0	12.7	29.1	394	-	INTERP
ACH502-210	21.5	12.7	29.1	431	-	INTERP
ACH502-230	23.4	12.7	29.1	468	-	INTERP
ACH500-250	26.2	12.7	29.1	505	-	INTERP
ACH1000-150	14.9	19.2	32.2	536	-	INTERP
ACH500-270	28.2	12.7	29.1	542	-	<b>UUT 1</b>
ACH1000-170	16.8	19.2	32.2	597	-	<b>UUT 3</b>
<b>Subcomponent: Condenser - Manufacturer: Sanhua</b>						
026-45535-000	1.0	87.8	47.7	62	-	<b>UUT 1-4</b>
<b>Subcomponent: Motor - Manufacturer: Regal Beloit</b>						
024-36873-507	15.8	6.5	6.8	50	Voltage: 414-515V	<b>UUT 2-4</b>
024-36873-503	15.8	6.5	6.8	50	Voltage: 180-220V	<b>UUT 1</b>
024-34980-501	15.7	6.5	6.8	52	Voltage: 414-515V	<b>UUT 2</b>
024-34980-502	15.7	6.5	6.8	52	Voltage: 180-220V	<b>UUT 1</b>

**Notes:** Table continues on the next page. Additional notes, information, and seismic parameters are shown at the end of the table.



**JOHNSON CONTROLS  
YLAA/QTC3 Air-Cooled Scroll Chillers with Brazed Plate Heat Exchangers**

**TABLE 3. SUBCOMPONENTS (CONTINUED)**

Model Number	Dimensions (in)			Max. Wt. (lb)	Description / Notes	Basis
	Depth	Width	Height			
<b>Subcomponent: Impeller - Manufacturer: MultiWing</b>						
026-41594-000	35.2	35.2	4.0	25	-	<b>UUT 1-4</b>
026-41942-000	35.2	35.2	4.0	25	-	<b>UUT 1,2</b>
<b>Subcomponent: Electronic Expansion Valve - Manufacturer: Danfoss</b>						
ETS-25	2.4	4.8	5.9	2	-	<b>UUT 2</b>
ETS-50	2.4	5.0	5.9	3	-	INTERP
ETS-100	2.4	6.6	8.1	4	-	<b>UUT 1</b>
<b>Subcomponent: Electronic Expansion Valve - Manufacturer: Sporlan</b>						
SERI-G	1.6	6.8	6.3	3	-	EXTRAP
SERI-J	1.6	7.1	6.3	3	-	EXTRAP
SERI-K	1.6	7.7	6.3	3	-	<b>UUT 3</b>
SERI-L	1.6	7.7	6.3	3	-	INTERP
SEHI-175	2.2	8.5	7.9	4	-	<b>UUT 3</b>
<b>Subcomponent: AYK550-UH-***A-*/K465 Drive - Manufacturer: ABB</b>						
024-34333-026, ABB 012A-4	8.3	4.9	14.5	14	380V-480V, 11.9A	EXTRAP
024-34334-011, ABB 024A-2	8.7	4.9	18.5	20	208V-240V, 24.2A	EXTRAP
024-34334-012, ABB 031A-2	8.7	4.9	18.5	20	208V-240V, 30.8A	EXTRAP
024-34334-021, ABB 015A-4	8.7	4.9	18.5	20	380V-480V, 15.4A	EXTRAP
024-34334-022, ABB 023A-4	8.7	4.9	18.5	20	380V-480V, 23A	EXTRAP
024-34397-000, ABB 011A-6	8.7	4.9	18.5	20	500V-600V, 11A	EXTRAP
024-34398-000, ABB 017A-6	8.7	4.9	18.5	20	500V-600V, 17A	EXTRAP
024-34396-000, ABB 09A0-6	8.7	4.9	18.5	20	500V-600V, 9.0A	EXTRAP
024-34335-011, ABB 046A-2	9.1	8.0	23.0	35	208V-240V, 46.2A	EXTRAP
024-34335-012, ABB 059A-2	9.1	8.0	23.0	35	208V-240V, 59.3A	<b>UUT 4</b>
024-34335-021, ABB 031A-4	9.1	8.0	23.0	35	380V-480V, 31A	<b>UUT 3</b>
024-34335-022, ABB 038A-4	9.1	8.0	23.0	35	380V-480V, 38A	INTERP
024-35956-000, ABB 045A-4	9.1	8.0	23.0	35	380V-480V, 44A	INTERP
024-34399-000, ABB 022A-6	9.1	8.0	23.0	35	500V-600V, 22A	INTERP
024-34336-022, ABB 059A-4	10.3	8.0	27.1	53	380V-480V, 59A	INTERP
024-34336-023, ABB 072A-4	10.3	8.0	27.1	53	380V-480V, 72A	<b>UUT 4</b>
<b>Subcomponent: AYK580-01-***A-*/P940 Drive - Manufacturer: ABB</b>						
024-40329-001, ABB 012A-4	8.8	4.9	14.7	10	380V-480V, 12A	EXTRAP
024-40329-101, ABB 024A-2	9.0	4.9	18.6	15	200V-240V, 24.2A	EXTRAP
024-40329-102, ABB 031A-2	9.0	4.9	18.6	15	200V-240V, 30.8A	EXTRAP
024-40329-003, ABB 023A-4	9.0	4.9	18.6	15	380V-480V, 23A	EXTRAP
024-40329-003, ABB 023A-4	9.0	4.9	18.6	15	380V-480V, 23A	EXTRAP
024-40329-202, ABB 011A-6	9.0	4.9	18.6	15	500V-600V, 11A	EXTRAP
024-40329-203, ABB 017A-6	9.0	4.9	18.6	15	500V-600V, 17A	EXTRAP
024-40329-201, ABB 09A0-6	9.0	4.9	18.6	15	500V-600V, 9.0A	EXTRAP
024-40329-103, ABB 046A-2	9.0	8.0	19.3	26	200V-240V, 46.2A	EXTRAP
024-40329-104, ABB 059A-2	9.0	8.0	19.3	26	200V-240V, 59.3A	<b>UUT 4</b>
024-40329-004, ABB 027A-4	9.0	8.0	19.3	26	380V-480V, 27A	INTERP
024-40329-005, ABB 034A-4	9.0	8.0	19.3	26	380V-480V, 34A	INTERP
024-40329-006, ABB 044A-4	9.0	8.0	19.3	26	380V-480V, 44A	INTERP

**Notes:** Table continues on the next page. Additional notes, information, and seismic parameters are shown at the end of the table.

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**YLAA/QTC3 Air-Cooled Scroll Chillers with Brazed Plate Heat Exchangers**

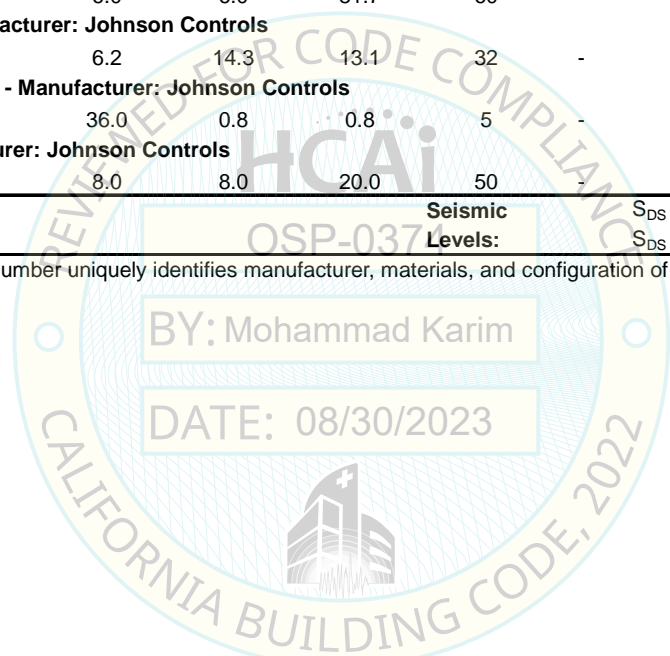
**TABLE 3. SUBCOMPONENTS (CONTINUED)**

Model Number	Dimensions (in)			Max. Wt. (lb)	Description / Notes	Basis
	Depth	Width	Height			
<b>Subcomponent: AYK580-01-***A-+P940 Drive - Manufacturer: ABB (continued)</b>						
024-40329-204, ABB 022A-6	9.0	8.0	19.3	26	500V-600V, 22A	INTERP
024-40329-007, ABB 052A-4	10.1	8.0	25.0	42	380V-480V, 52A	INTERP
024-40329-008, ABB 065A-4	10.1	8.0	25.0	42	380V-480V, 65A	<b>UUT 4</b>
<b>Subcomponent: Liquid Receiver - Manufacturer: Westermeyer</b>						
026-45013-000	6.0	6.0	81.7	60	-	<b>UUT 1-4</b>
<b>Subcomponent: Strainer - Manufacturer: Johnson Controls</b>						
029-27042-000	6.2	14.3	13.1	32	-	<b>UUT 3</b>
<b>Subcomponent: Hot Gas Bypass - Manufacturer: Johnson Controls</b>						
392-41495-100	36.0	0.8	0.8	5	-	<b>UUT 3</b>
<b>Subcomponent: VFD - Manufacturer: Johnson Controls</b>						
VFD66	8.0	8.0	20.0	50	-	<b>UUT 1-3</b>
<b>Mounting:</b> Mounted within unit.				<b>Seismic Levels:</b>	$S_{DS} = 2.00g$ for $z/h = 1$ $S_{DS} = 2.50g$ for $z/h = 0$	$I_p = 1.5$

**Construction/Options:** Model number uniquely identifies manufacturer, materials, and configuration of subcomponents.

BY: Mohammad Karim

DATE: 08/30/2023





## UUT 1

Manufacturer: JOHNSON CONTROLS INC.  
 Model number: YLAA0175H17X/QTC3170TE17X  
 Unit function: AIR-COOLED CHILLER  
 Serial number: N/A

Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
236.6	93.7	94.2	10,074	3.5	7.0	8.1

Code & criteria: 2022 CBC, ICC-ES AC156

Test laboratory: ERDC-CERL

Report: 2011-0263-TR-004, r0 (dated 12-9-13), tested on 10-30-13

S <sub>DS</sub> (g)	z/h	A <sub>FLX-H</sub> (g)	A <sub>RIG-H</sub> (g)	A <sub>FLX-V</sub> (g)	A <sub>RIG-V</sub> (g)
2.50	1	4.00	3.00	1.68	0.68
2.50	0				

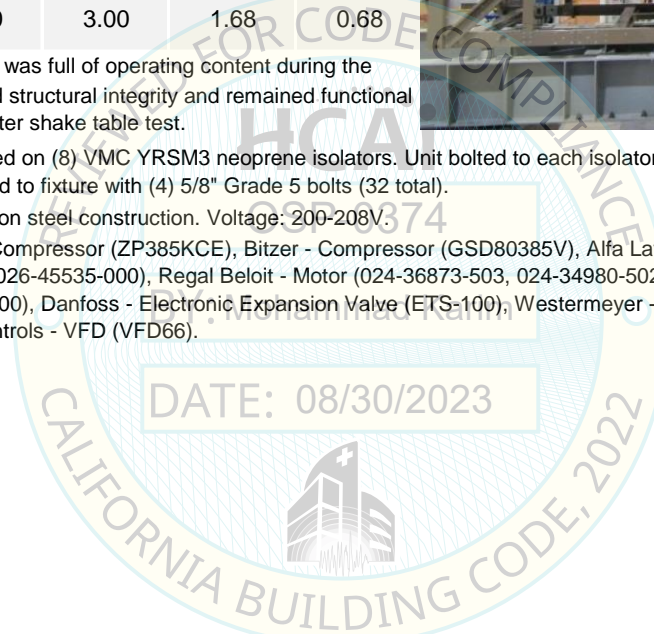
Importance Factor, I<sub>p</sub> = 1.5: Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

Mounting: Floor mounted on (8) VMC YRSM3 neoprene isolators. Unit bolted to each isolator with (1) 5/8" Grade 8 bolt (8 total). Each isolator bolted to fixture with (4) 5/8" Grade 5 bolts (32 total).

Construction: Painted carbon steel construction. Voltage: 200-208V.

Subcomponents: Copeland - Compressor (ZP385KCE), Bitzer - Compressor (GSD80385V), Alfa Laval - Evaporator (ACH500-270), Sanhua - Condenser (026-45535-000), Regal Beloit - Motor (024-36873-503, 024-34980-502), MultiWing - Impeller (026-41594-000, 026-41942-000), Danfoss - Electronic Expansion Valve (ETS-100), Westermeyer - Liquid Receiver (026-45013-000), Johnson Controls - VFD (VFD66).

Testing notes: N/A



## UUT 2

Manufacturer: JOHNSON CONTROLS INC.  
 Model number: YLAA0070S46X/QTC3070TE46X  
 Unit function: AIR-COOLED CHILLER  
 Serial number: N/A

Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
120.0	93.7	94.2	5,292	3.6	4.8	7.9

Code & criteria: 2022 CBC, ICC-ES AC156

Test laboratory: ERDC-CERL

Report: 2011-0263-TR-004, r0 (dated 12-9-13), tested on 10-29-13

S <sub>DS</sub> (g)	z/h	A <sub>FLX-H</sub> (g)	A <sub>RIG-H</sub> (g)	A <sub>FLX-V</sub> (g)	A <sub>RIG-V</sub> (g)
2.50	1	4.00	3.00	1.68	0.68
2.50	0				

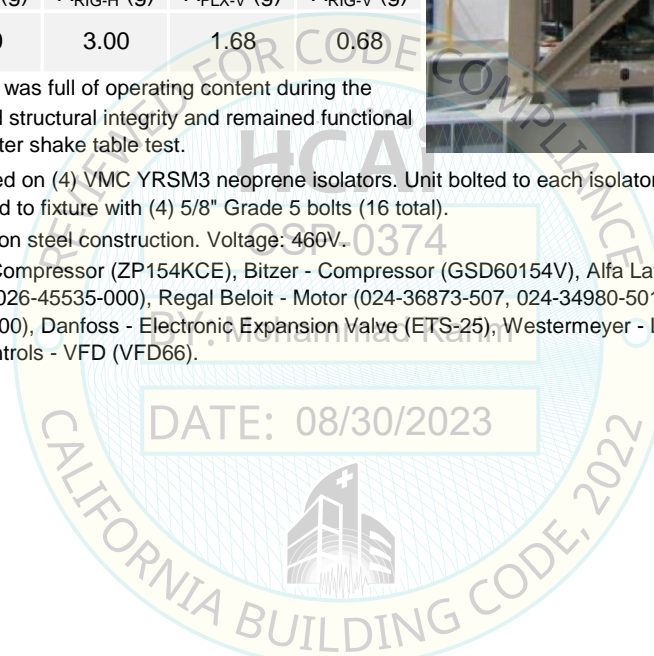
Importance Factor, I<sub>p</sub> = 1.5: Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

Mounting: Floor mounted on (4) VMC YRSM3 neoprene isolators. Unit bolted to each isolator with (1) 5/8" Grade 8 bolt (4 total). Each isolator bolted to fixture with (4) 5/8" Grade 5 bolts (16 total).

Construction: Painted carbon steel construction. Voltage: 460V.

Subcomponents: Copeland - Compressor (ZP154KCE), Bitzer - Compressor (GSD60154V), Alfa Laval - Evaporator (ACH500-102), Sanhua - Condenser (026-45535-000), Regal Beloit - Motor (024-36873-507, 024-34980-501), MultiWing - Impeller (026-41594-000, 026-41942-000), Danfoss - Electronic Expansion Valve (ETS-25), Westermeyer - Liquid Receiver (026-45013-000), Johnson Controls - VFD (VFD66).

Testing notes: N/A



## UUT 3

Manufacturer: JOHNSON CONTROLS INC.  
 Model number: YLAA0230H46X/QTC3225TE46X  
 Unit function: AIR-COOLED CHILLER  
 Serial number: N/A



Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
274.4	93.7	94.2	10,900	2.1	2.3	5.0

Code & criteria: 2022 CBC, ICC-ES AC156  
 Test laboratory: ENVIRONMENTAL TESTING LABORATORY  
 Report: 17123TR1.0 (dated 7-12-18), tested on 7-3-18

S <sub>DS</sub> (g)	z/h	A <sub>FLX-H</sub> (g)	A <sub>RIG-H</sub> (g)	A <sub>FLX-V</sub> (g)	A <sub>RIG-V</sub> (g)
2.00	1	3.20	2.40	1.68	0.68
2.50	0				

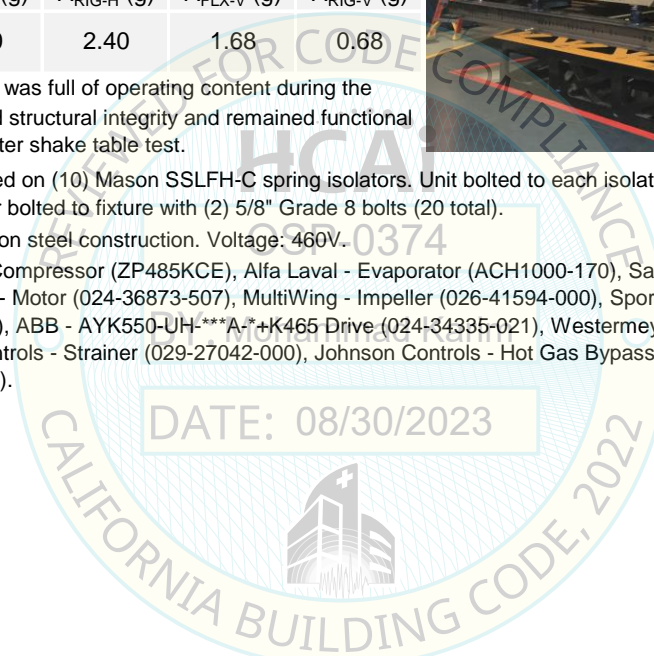
Importance Factor, I<sub>p</sub> = 1.5: Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

Mounting: Floor mounted on (10) Mason SSLFH-C spring isolators. Unit bolted to each isolator with (1) 5/8" Grade 8 bolt (10 total). Each isolator bolted to fixture with (2) 5/8" Grade 8 bolts (20 total).

Construction: Painted carbon steel construction. Voltage: 460V.

Subcomponents: Copeland - Compressor (ZP485KCE), Alfa Laval - Evaporator (ACH1000-170), Sanhua - Condenser (026-45535-000), Regal Beloit - Motor (024-36873-507), MultiWing - Impeller (026-41594-000), Sporlan - Electronic Expansion Valve (SERI-K, SEHI-175), ABB - AYK550-UH-\*\*\*A\*\*+K465 Drive (024-34335-021), Westermeyer - Liquid Receiver (026-45013-000), Johnson Controls - Strainer (029-27042-000), Johnson Controls - Hot Gas Bypass (392-41495-100), Johnson Controls - VFD (VFD66).

Testing notes: N/A



## UUT 4

Manufacturer: JOHNSON CONTROLS INC.

Model number: YLAA0048H46X

Unit function: AIR-COOLED CHILLER

Serial number: N/A

Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
100.2	93.7	94.2	3,900	5.8	4.4	9.5

Code & criteria: 2022 CBC, ICC-ES AC156

Test laboratory: ENVIRONMENTAL TESTING LABORATORY

Report: 21043TR1.0 (dated 4-18-22), tested on 12-8-21

S <sub>DS</sub> (g)	z/h	A <sub>FLX-H</sub> (g)	A <sub>RIG-H</sub> (g)	A <sub>FLX-V</sub> (g)	A <sub>RIG-V</sub> (g)
2.00	1	3.20	2.40	1.68	0.68
2.50	0				

Importance Factor, I<sub>p</sub> = 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:** Floor mounted on (4) VMC YRSM3 neoprene isolators. Unit bolted to each isolator with (1) 5/8" Grade 8 bolt (4 total). Each isolator bolted to fixture with (2) 5/8" Grade 8 bolts (8 total).

**Construction:** Painted carbon steel construction. Voltage: 460V & 200-208V.

**Subcomponents:** Copeland - Compressor (ZP154KCE), Alfa Laval - Evaporator (ACH500-102), Sanhua - Condenser (026-45535-000), Regal Beloit - Motor (024-36873-507), MultiWing - Impeller (026-41594-000), ABB - AYK550-UH-\*\*\*A-+K465 Drive (024-34335-012, 024-34336-023), ABB - AYK580-01-\*\*\*A-+P940 Drive (024-40329-104, 024-40329-008), Westermeyer - Liquid Receiver (026-45013-000).

**Testing notes:** N/A

