



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

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

OFFICE USE ONLY

APPLICATION #: **OSP – 0250 – 10**

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

Type:  New  Renewal

**Manufacturer Information**

Manufacturer: Johnson Controls, Inc.

Manufacturer's Technical Representative: Brian Aske

Mailing Address: 631 South Richland Ave., York, PA 17403

Telephone: 717-771-7814 Email: [Brian.A.Aske@jci.com](mailto:Brian.A.Aske@jci.com)

**Product Information**

Product Name: YCAL/QTC2 & YCUL Liquid Chillers

Product Type: Chiller

Product Model Number: Various (see Certified Product Matrix)  
(List all unique product identification numbers and/or part numbers)

General Description: Air-Cooled Scroll Compressor Liquid Chillers mounted at base on neoprene mount isolators.

The YCUL model line is identical to the YCAL/QTC2 model line except that they do not contain the evaporator component.

Mounting Description: Base mounted on captive neoprene mount isolators.

**Applicant Information**

Applicant Company Name: TRU Compliance, LLC – A Tobolski Watkins Affiliate

Contact Person: Matthew J. Tobolski, Ph.D., S.E.

Mailing Address: 960 SW Disk Dr., Ste. 104, Bend, OR 97702

Telephone: 844-878-0200 Email: [mtobolski@trucompliance.com](mailto:mtobolski@trucompliance.com)

I hereby agree to reimburse the Office of Statewide Health Planning and Development review fees in accordance with the California Administrative Code, 2013.

Signature of Applicant:  Date: 07/07/2015

Title: President & CEO Company Name: TRU Compliance, LLC

"Access to Safe, Quality Healthcare Environments that Meet California's Diverse and Dynamic Needs"

STATE OF CALIFORNIA – HEALTH AND HUMAN SERVICES AGENCY  
OSH-FD-759 (REV 10/21/14)





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

Company Name: TRU Compliance, LLC – A Tobolski Watkins Affiliate

Name: Matthew J. Tobolski, Ph.D., S.E. California License Number: S 5648

Mailing Address: 960 SW Disk Dr., Ste. 104, Bend, OR 97702

Telephone: 844-878-0200 Email: [mtobolski@trucompliance.com](mailto:mtobolski@trucompliance.com)

**Supports and Attachments Preapproval**

- Supports and attachments are preapproved under OPM- \_\_\_\_\_  
(Separate application for OSHPD Preapproval of Manufacturer's Certification (OPM) of Supports and attachments is required)
- Supports and attachments are not preapproved

**Certification Method**

- Testing in accordance with:  ICC-ES AC156
- Other (Please Specify): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Testing Laboratory**

Company Name: Clark Dynamic Test Laboratory, Inc.

Contact Name: Susan Chang

Mailing Address: 1801 Route 51 South, Building 8, Jefferson Hills, PA 15025

Telephone: 412-387-1001 Email: [schang@clarktesting.com](mailto:schang@clarktesting.com)

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**Seismic Parameters**

Design in accordance with ASCE 7-10 Chapter 13:  Yes  No

Design Basis of Equipment or Components ( $F_p/W_p$ ) = 3.60

$S_{DS}$  (Design spectral response acceleration at short period, g) = 2.0

$a_p$  (In-structure equipment or component amplification factor) = 2.5

$R_p$  (Equipment or component response modification factor) = 2.5

$\Omega_0$  (System overstrength factor) = 2.5

$I_p$  (Importance factor) = 1.5

$z/h$  (Height factor ratio) = 1.0

Equipment or Component Natural Frequencies (Hz) = See Attachment

Overall dimensions and weight (or range thereof) = See Attachment

Equipment or Components @ grade designed in accordance with ASCE 7-10 Chapter 15:  Yes  No

Design Basis of Equipment or Components ( $V/W$ ) = \_\_\_\_\_

$S_{DS}$  (Design spectral response acceleration at short period, g) = \_\_\_\_\_

$S_{D1}$  (Design spectral response acceleration at 1 second period, g) = \_\_\_\_\_

R (Response modification coefficient) = \_\_\_\_\_

$\Omega_0$  (System overstrength factor) = \_\_\_\_\_

$C_d$  (Deflection amplification factor) = \_\_\_\_\_

$I_p$  (Importance factor) = 1.5

Height to Center of Gravity above base = \_\_\_\_\_

Equipment or Component Natural Frequencies (Hz) = \_\_\_\_\_

Overall dimensions and weight (or range thereof) = \_\_\_\_\_

Tank(s) designed in accordance with ASME BPVC, 2010:  Yes  No

**List of Attachments Supporting Special Seismic Certification**

Test Report(s)  Drawings  Calculations  Manufacturer's Catalog

Other(s) (Please Specify): Attachment A

**OSHPD Approval (For Office Use Only) – Approval Expires on December 31, 2019**

Signature:  Date: August 3, 2015

Print Name: Timothy J. Piland Title: SSE

Special Seismic Certification Valid Up to :  $S_{DS}$  (g) = 2.0  $z/h$  = 1

Condition of Approval (if applicable): \_\_\_\_\_





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# Table 1

## Special Seismic Certification Certified Product Matrix

TWEI Project No.: 2011-0263-CO-004

**Manufacturer:** Johnson Controls, Inc.

**Model Line:** YCAL/QTC2 & YCUL

**Certified Product Construction Summary:**

Painted carbon steel enclosure.

**Certified Options Summary:**

200, 230, 380, 400 or 460V (Component voltage tied directly to overall unit voltage).

See Tables 2-8 for certified option details.

**Mounting Configuration:**

Isolated floor mount using captive mount isolators. SEOR to design unit anchorage.

Note: Installed mounting configuration must be of similar configuration and equivalent strength and stiffness to those tested.

**Building Code:** CBC 2013

**Seismic Certification Limits:**

$S_{DS} = 2.00g$

$z/h = 1.0$

$I_p = 1.5$

Model Line	Model	Dimension (in)			Weight (lb)	Notes	UUT
		Depth	Width	Height			
YCAL & YCUL Chillers	YCAL0019	109.8	44.7	46.1	1,597		
	YCUL0020	109.8	44.7	46.1	1,471		
	YCAL0022*	109.8	44.7	46.1	1,597	460V	1
	YCUL0024	109.8	44.7	46.1	1,592		
	YCAL0028	118.6	44.7	50.0	1,829		
	YCUL0031	118.6	44.7	50.0	1,838		
	YCAL0033	118.6	44.7	50.0	2,077		
	YCUL0035	118.6	44.7	50.0	2,079		
	YCAL0043	144.8	90.6	47.8	2,967		
	YCUL0045	144.8	90.6	47.8	2,967		
	YCAL0046	144.8	90.6	47.8	3,001		
	YCUL0051	144.8	90.6	47.8	3,001		
	YCAL0052	148.8	90.6	62.6	3,233		
	YCUL0055	148.8	90.6	62.6	3,233		
	YCAL0056	148.8	90.6	62.6	3,245		
	YCUL0065	148.8	90.6	62.6	3,245		
	YCAL0066	153.6	90.6	62.6	4,142	200V	2
	YCUL0072	153.6	90.6	62.6	4,142		

\*YCAL0022 (UUT-1) is certified for  $S_{DS} = 2.50g$  @  $z/h = 1.0$   
 All other components are certified for  $S_{DS} = 2.00g$  @  $z/h = 1.0$

















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# Table 8

## Special Seismic Certification Certified Subcomponent Matrix

TWEI Project No.: 2011-0263-CO-004

**Manufacturer:** Johnson Controls, Inc.

**Model Line:** YCAL/QTC2 & YCUL **ELECTRICAL COMPONENTS**

**Certified Subcomponent Construction Summary:**  
NEMA 3R Painted carbon steel enclosure.

**Certified Options Summary:**

**Mounting Configuration:**  
Mounted on equipment.

**Building Code:** CBC 2013 **Seismic Certification Limits:**  $S_{DS} = 2.00g$   $z/h = 1.0$   $I_p = 1.5$

Model Line	Model	Dimension (in)			Weight (lb)	Notes	UUT
		Depth	Width	Height			
RAM Industries (Enclosure)	371-05161-xxx					Last 3 digits of model number vary based on unit voltage. 200-460V certified.	1
	371-05162-xxx						
	371-05163-xxx						2
General Electric (Cntrl. Transformer)	1 kVA					Dry-Type/Cased, 200-480V primary, 120V secondary	1,2
Johnson Controls, Inc. (I/O Circuit Board)	Digital Multilayer						1,2
Schneider Electric (Contactors)	3-Pole, 9-95A					9,25,60,95A Tested	1
Sprague Capacitor (Fan Capacitor)	370 VAC					7.5-10mf	1,2
Ferraz Shwmut (Fuses)	600V, 10-20A, Time Delay					6,10,12,20A Tested	1,2
Copper Bussman (Fuse Blocks)	1,2, and 3-Pole, 600V, 30A, Class CC					1,2,3 Pole Tested	1,2
ABB (Disconnect)	150A-400A, 600V, 3-Pole					Single Point Supply, Molded Case. 150,400A Tested.	1,2
Basler Electric (CB Transformer)	CL-2, 75VA, 115V Primary, 24V Second.						1,2
Dyna-Graphics (Control Keypad)	Keypad, Non-Embossed, English						1,2





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**UUT - 1**

## Unit Under Test (UUT) Summary Sheet

TWEI Project No.: 2011-0263-CO-004

**Manufacturer:** Johnson Controls, Inc.

**Model Line:** YCAL/QTC2 & YCUL Chillers

**Model Number:** YCAL0022/QTC2020T      **Serial Number:** N/A

**Product Construction Summary:**  
Painted carbon steel enclosure.

**Options/Subcomponent Summary:**  
460V System Voltage. Copeland ZP120 compressor, SWEP PT120T-82 evaporator, JCI 375-58294-024 condenser, (2) AO Smith 024-35427 fan motors, MultiWing 026-43008-000 fan impeller, Danfoss 025-40900-002 thermal expansion valve, RAM Industries electrical panel.

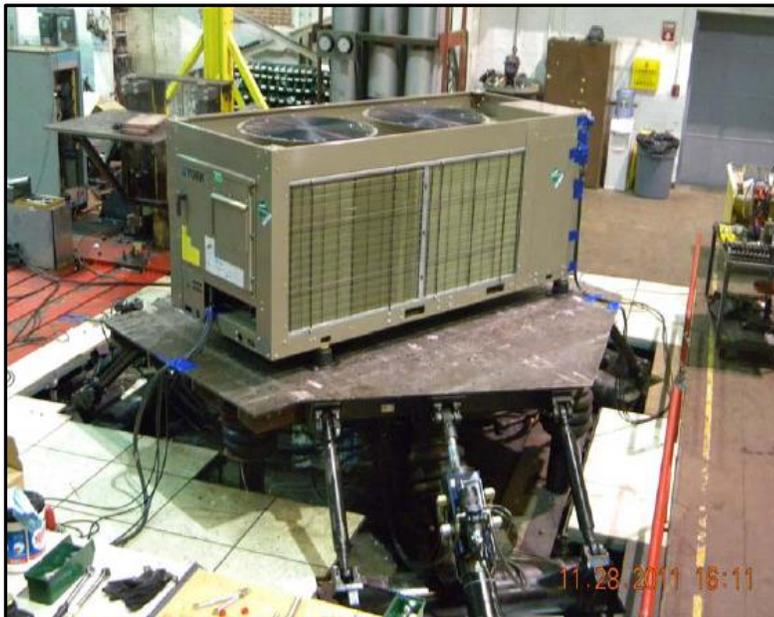
### UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
1,580	108.0	48.0	48.0	16.1	8.1	13.1

### UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S <sub>DS</sub>	z/h	I <sub>p</sub>	A <sub>FLX-H</sub>	A <sub>RIG-H</sub>	A <sub>FLX-V</sub>	A <sub>RIG-V</sub>
CBC 2013	ICC-ES AC156	2.50g	1.0	1.5	4.00g	3.00g	1.67g	0.67g

**Test Mounting Details:**



Unit mounted on four (4) VMC RSM 3-700 Neoprene isolators mounted to shake table platen using eight (8) 5/8"-11 bolts. Unit maintained structural integrity and remained functional per manufacturer requirement. Contents were included in testing per operating conditions.



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**UUT - 2**

## Unit Under Test (UUT) Summary Sheet

TWEI Project No.: 2011-0263-CO-004

**Manufacturer:** Johnson Controls, Inc.

**Model Line:** YCAL/QTC2 & YCUL Chillers

**Model Number:** YCAL0066      **Serial Number:** N/A

**Product Construction Summary:**  
Painted carbon steel enclosure.

**Options/Subcomponent Summary:**  
200V System Voltage. Copeland ZP182 & ZP235 compressors, SWEP DP300x198 evaporator, JCI 375-58276-200 condenser, (3) Baldor 024-34980 & (1) 024-27322 fan motors, MultiWing 026-41593-000 & 026-41594-000 fan impellers, Danfoss 025-40900-006 & 025-40900-007 thermal expansion valves, RAM Industries electrical panel.

### UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
4,060	156.0	90.0	60.0	4.5	6.1	6.1

### UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S <sub>DS</sub>	z/h	I <sub>p</sub>	A <sub>FLX-H</sub>	A <sub>RIG-H</sub>	A <sub>FLX-V</sub>	A <sub>RIG-V</sub>
CBC 2013	ICC-ES AC156	2.00g	1.0	1.5	3.20g	2.40g	1.67g	0.67g

**Test Mounting Details:**



Unit mounted on two (2) VMC RSM 3-1000 Neoprene isolators (under the fans) and two (2) VMC RSM 3-1300 Neoprene Isolators (under the compressors) mounted to shake table platen using eight (8) 5/8"-11 bolts.  
Unit maintained structural integrity and remained functional per manufacturer requirement.  
Contents were included in testing per operating conditions.