



OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT
FACILITIES DEVELOPMENT DIVISION

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

OFFICE USE ONLY

APPLICATION #: OSP – 0260 – 10

OSHPD Special Seismic Certification Preapproval (OSP)

Type: ☐ New ☒ Renewal

Manufacturer Information

Manufacturer: Drake Refrigeration

Manufacturer's Technical Representative: Martin Squicciarini

Mailing Address: 2900 Samuel Drive, Bensalem, PA 19020, USA

Telephone: (267) 525-3523 Email: MSquicciarini@drakechillers.com

Product Information

Product Name: PACT Chillers

Product Type: Chillers

Product Model Number: See I. Certified Product Table attached

(List all unique product identification numbers and/or part numbers)

General Description: The rigid base mounted PACT line are process chillers. These chillers are packaged, air cooled condensers, stainless steel tank model chillers with one or two loops. This line is a scroll compressor chiller series used for residential, commercial air conditioning, and process cooling applications. Seismic enhancements made to the UUTs & modifications required to address anomalies observed during the tests shall be incorporated into the production units.

Mounting Description: Rigidly floor mounted

Applicant Information

Applicant Company Name: Drake Refrigeration

Contact Person: Martin Squicciarini

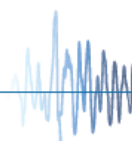
Mailing Address: 2900 Samuel Drive, Bensalem, PA 19020, USA

Telephone: (267) 525-3523 Email: MSquicciarini@drakechillers.com

I hereby agree to reimburse the Office of Statewide Health Planning and Development review fees in accordance with the California Administrative Code, 2016.

Signature of Applicant:  Date: January 29, 2016

Title: Engineer Company Name: Drake Refrigeration





**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: Forell/Elsesser Engineers, Inc.
Name: Marco Scanu, SE California License Number: S4454
Mailing Address: 160 Pine St., 6th Flr., San Francisco, CA 94111
Telephone: (415) 837-0700 Email: m.scanu@forell.com

Supports and Attachments Preapproval

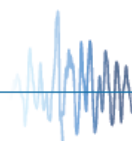
- ☐ Supports and attachments are preapproved under OPM-
(Separate application for OSHPD Preapproval of Manufacturer's Certification (OPM) of Supports and attachments is required)
- ☒ Supports and attachments are not preapproved

Certification Method

- ☒ Testing in accordance with: ☒ ICC-ES AC156
- ☐ Other (Please Specify): _____

Testing Laboratory

Company Name: National Technical Systems
Contact Name: Jonathan Mendoza
Mailing Address: 533 Main Street, Acton, MA 01720
Telephone: (978) 263-9515 Email: jmendoza@nts.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) = 2.03

S_{DS} (Design spectral response acceleration at short period, g) = 2.70

a_p (In-structure equipment or component amplification factor) = 1.0

R_p (Equipment or component response modification factor) = 2.5

Ω_0 (System overstrength factor) = 2.0

I_p (Importance factor) = 1.5

z/h (Height factor ratio) = 1.0

Equipment or Component Natural Frequencies (Hz) = See attachment, "III. UUT Summary Sheets"

Overall dimensions and weight (or range thereof) = See attachment, "I. Certified Products Table"

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) = 1.0

Ω_0 (System overstrength factor) = 1.0

C_d (Deflection amplification factor) = 1.0

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, 2015: ☐ Yes ☒ No

List of Attachments Supporting Special Seismic Certification

☒ Test Report(s) ☐ Drawings ☒ Calculations ☒ Manufacturer's Catalog

☒ Other(s) (Please Specify): I. Certified Products Table, II. Certified Subcomponents Table, III. UUT Summary Sheets

OSHDP Approval (For Office Use Only) – Approval Expires on December 31, 2022

Signature: M. R. Karim

Date: 3/9/2016

Print Name: M. R. Karim

Title: SHFR

Special Seismic Certification Valid Up to : S_{DS} (g) = 2.7 z/h = 1.0

Condition of Approval (if applicable): _____

Drake Refrigeration - PACT Chillers

I. Certified Product Table

	Width	Length	Height	Maximum Weight		Testing Status
				Empty	Operating	
Packaged, Air-Cooled Chillers with Tank (PACT) - Single Circuit Refrigeration						
PACT12S3-S2-ZS	34 in	36 in	60 in	550 lbs	800 lbs	TR63648-12I-SEI UUT-1
PACT12S6-S2-ZS	34 in	36 in	60 in	550 lbs	800 lbs	INTERPOLATED
PACT18S3-S2-ZS	34 in	36 in	60 in	600 lbs	850 lbs	INTERPOLATED
PACT18S3-T3-ZS	34 in	36 in	60 in	600 lbs	850 lbs	INTERPOLATED
PACT18S3-T4-ZS	34 in	36 in	60 in	600 lbs	850 lbs	INTERPOLATED
PACT18S6-S2-ZS	34 in	36 in	60 in	600 lbs	850 lbs	INTERPOLATED
PACT18S6-T3-ZS	34 in	36 in	60 in	600 lbs	850 lbs	INTERPOLATED
PACT18S6-T4-ZS	34 in	36 in	60 in	600 lbs	850 lbs	INTERPOLATED
PACT24S3-S2-ZS	34 in	36 in	60 in	650 lbs	900 lbs	INTERPOLATED
PACT24S3-T3-ZS	34 in	36 in	60 in	650 lbs	900 lbs	INTERPOLATED
PACT24S3-T4-ZS	34 in	36 in	60 in	650 lbs	900 lbs	INTERPOLATED
PACT24S6-S2-ZS	34 in	36 in	60 in	650 lbs	900 lbs	INTERPOLATED
PACT24S6-T3-ZS	34 in	36 in	60 in	650 lbs	900 lbs	INTERPOLATED
PACT24S6-T4-ZS	34 in	36 in	60 in	650 lbs	900 lbs	INTERPOLATED
PACT30S3-S2-ZS	34 in	36 in	60 in	700 lb	950 lbs	INTERPOLATED
PACT30S3-T3-ZS	34 in	36 in	60 in	700 lb	950 lbs	INTERPOLATED
PACT30S3-T4-ZS	34 in	36 in	60 in	700 lb	950 lbs	INTERPOLATED
PACT30S3-T5-ZS	34 in	36 in	60 in	700 lb	950 lbs	INTERPOLATED
PACT30S3-T9-ZS	34 in	36 in	60 in	700 lb	950 lbs	INTERPOLATED
PACT30S6-S2-ZS	34 in	36 in	60 in	700 lb	950 lbs	INTERPOLATED
PACT30S6-T3-ZS	34 in	36 in	60 in	700 lb	950 lbs	INTERPOLATED
PACT30S6-T4-ZS	34 in	36 in	60 in	700 lb	950 lbs	INTERPOLATED
PACT36S3-S2-ZS	34 in	56 in	66 in	800 lbs	1050 lbs	INTERPOLATED
PACT36S3-T3-ZS	34 in	56 in	66 in	800 lbs	1050 lbs	INTERPOLATED
PACT36S3-T4-ZS	34 in	56 in	66 in	800 lbs	1050 lbs	INTERPOLATED
PACT36S6-S2-ZS	34 in	56 in	66 in	800 lbs	1050 lbs	INTERPOLATED
PACT36S6-T3-ZS	34 in	56 in	66 in	800 lbs	1050 lbs	INTERPOLATED
PACT36S6-T4-ZS	34 in	56 in	66 in	800 lbs	1050 lbs	INTERPOLATED
PACT48S3-S2-ZS	34 in	56 in	66 in	850 lbs	1350 lbs	INTERPOLATED
PACT48S3-T3-ZS	34 in	56 in	66 in	850 lbs	1350 lbs	INTERPOLATED
PACT48S3-T4-ZS	34 in	56 in	66 in	850 lbs	1350 lbs	INTERPOLATED
PACT48S3-T3-ZTS	34 in	56 in	66 in	850 lbs	1350 lbs	INTERPOLATED
PACT48S3-T3-ZTS	34 in	56 in	66 in	850 lbs	1350 lbs	INTERPOLATED
PACT48S3-T4-ZTS	34 in	56 in	66 in	850 lbs	1350 lbs	INTERPOLATED

Note: All units are constructed out of 11 to 22 Gauge Galvanized Carbon Steel

Drake Refrigeration - PACT Chillers
I. Certified Product Table

	Width	Length	Height	Maximum Weight		Testing Status
				Empty	Operating	
Packaged, Air-Cooled Chillers with Tank (PACT) - Single Circuit Refrigeration - cont'd						
PACT48S6-S2-ZS	34 in	56 in	66 in	850 lbs	1350 lbs	INTERPOLATED
PACT48S6-T3-ZS	34 in	56 in	66 in	850 lbs	1350 lbs	INTERPOLATED
PACT48S6-T4-ZS	34 in	56 in	66 in	850 lbs	1350 lbs	INTERPOLATED
PACT50S3-S2-ZS	34 in	56 in	66 in	875 lbs	1375 lbs	INTERPOLATED
PACT50S6-S2-ZS	34 in	56 in	66 in	875 lbs	1375 lbs	INTERPOLATED
PACT60S3-T3-ZS	34 in	56 in	66 in	900 lbs	1400 lbs	INTERPOLATED
PACT60S3-T4-ZS	34 in	56 in	66 in	900 lbs	1400 lbs	INTERPOLATED
PACT60S3-T5-ZS	34 in	56 in	66 in	900 lbs	1400 lbs	INTERPOLATED
PACT60S6-T3-ZS	34 in	56 in	66 in	900 lbs	1400 lbs	INTERPOLATED
PACT60S6-T4-ZS	34 in	56 in	66 in	900 lbs	1400 lbs	INTERPOLATED
PACT60S6-T5-ZS	34 in	56 in	66 in	900 lbs	1400 lbs	INTERPOLATED
PACT70S3-T3-ZS	34 in	85 in	66 in	1100 lbs	1600 lbs	INTERPOLATED
PACT70S3-T4-ZS	34 in	85 in	66 in	1100 lbs	1600 lbs	INTERPOLATED
PACT70S3-T5-ZS	34 in	85 in	66 in	1100 lbs	1600 lbs	INTERPOLATED
PACT70S6-T3-ZS	34 in	85 in	66 in	1100 lbs	1600 lbs	INTERPOLATED
PACT70S6-T4-ZS	34 in	85 in	66 in	1100 lbs	1600 lbs	INTERPOLATED
PACT70S6-T5-ZS	34 in	85 in	66 in	1100 lbs	1600 lbs	INTERPOLATED
PACT78S3-T3-ZTS	34 in	85 in	66 in	1300 lbs	1800 lbs	INTERPOLATED
PACT78S3-T4-ZTS	34 in	85 in	66 in	1300 lbs	1800 lbs	INTERPOLATED
PACT79S3-T3-ZTS	34 in	85 in	66 in	1300 lbs	1800 lbs	INTERPOLATED
PACT79S3-T4-ZTS	34 in	85 in	66 in	1300 lbs	1800 lbs	INTERPOLATED
PACT80S3-T3-ZS	34 in	85 in	66 in	1150 in	1900 lbs	INTERPOLATED
PACT80S3-T4-ZS	34 in	85 in	66 in	1150 in	1900 lbs	INTERPOLATED
PACT80S6-T3-ZS	34 in	85 in	66 in	1150 in	1900 lbs	INTERPOLATED
PACT80S6-T4-ZS	34 in	85 in	66 in	1150 in	1900 lbs	INTERPOLATED
PACT90S3-T3-ZS	34 in	85 in	66 in	1250 in	2000 lbs	INTERPOLATED
PACT90S3-T4-ZS	34 in	85 in	66 in	1250 in	2000 lbs	INTERPOLATED
PACT90S3-T5-ZS	34 in	85 in	66 in	1250 in	2000 lbs	INTERPOLATED
PACT90S6-T3-ZS	34 in	85 in	66 in	1250 in	2000 lbs	INTERPOLATED
PACT90S6-T4-ZS	34 in	85 in	66 in	1250 in	2000 lbs	INTERPOLATED
PACT90S6-T5-ZS	34 in	85 in	66 in	1250 in	2000 lbs	INTERPOLATED
PACT120S3-T3-ZS	34 in	85 in	66 in	1300 in	2050 lbs	INTERPOLATED
PACT120S3-T4-ZS	34 in	85 in	66 in	1300 in	2050 lbs	INTERPOLATED
PACT120S3-T5-ZS	34 in	85 in	66 in	1300 in	2050 lbs	INTERPOLATED

Note: All units are constructed out of 11 to 22 Gauge Galvanized Carbon Steel

Drake Refrigeration - PACT Chillers

I. Certified Product Table

	Width	Length	Height	Maximum Weight		Testing Status
				Empty	Operating	
Packaged, Air-Cooled Chillers with Tank (PACT) - Single Circuit Refrigeration - cont'd						
PACT120S6-T3-ZS	34 in	85 in	66 in	1300 in	2050 lbs	INTERPOLATED
PACT120S6-T4-ZS	34 in	85 in	66 in	1300 in	2050 lbs	INTERPOLATED
PACT120S6-T5-ZS	34 in	85 in	66 in	1300 in	2050 lbs	INTERPOLATED

Note: All units are constructed out of 11 to 22 Gauge Galvanized Carbon Steel

	Width	Length	Height	Maximum Weight		Testing Status
				Empty	Operating	
Packaged, Air-Cooled Chillers with Tank (PACT) - Dual Circuit Refrigeration						
PACT72D3-S2-ZS	34 in	75 in	73 in	1100 lbs	1600 lbs	INTERPOLATED
PACT72D3-T3-ZS	34 in	75 in	73 in	1100 lbs	1600 lbs	INTERPOLATED
PACT72D3-T4-ZS	34 in	75 in	73 in	1100 lbs	1600 lbs	INTERPOLATED
PACT72D3-T5-ZS	34 in	75 in	73 in	1100 lbs	1600 lbs	INTERPOLATED
PACT72D6-S2-ZS	34 in	75 in	73 in	1100 lbs	1600 lbs	INTERPOLATED
PACT72D6-T3-ZS	34 in	75 in	73 in	1100 lbs	1600 lbs	INTERPOLATED
PACT72D6-T4-ZS	34 in	75 in	73 in	1100 lbs	1600 lbs	INTERPOLATED
PACT96D3-S2-ZS	34 in	75 in	73 in	1200 lbs	1950 lbs	INTERPOLATED
PACT96D3-T3-ZS	34 in	75 in	73 in	1200 lbs	1950 lbs	INTERPOLATED
PACT96D3-T4-ZS	34 in	75 in	73 in	1200 lbs	1950 lbs	INTERPOLATED
PACT96D3-T5-ZS	34 in	75 in	73 in	1200 lbs	1950 lbs	INTERPOLATED
PACT96D6-S2-ZS	34 in	75 in	73 in	1200 lbs	1950 lbs	INTERPOLATED
PACT96D6-T3-ZS	34 in	75 in	73 in	1200 lbs	1950 lbs	INTERPOLATED
PACT96D6-T4-ZS	34 in	75 in	73 in	1200 lbs	1950 lbs	INTERPOLATED
PACT100D3-S2-ZS	34 in	75 in	73 in	1250 lbs	2000 lbs	INTERPOLATED
PACT100D6-S2-ZS	34 in	75 in	73 in	1250 lbs	2000 lbs	INTERPOLATED
PACT120D3-T3-ZS	34 in	75 in	73 in	1250 lbs	2000 lbs	INTERPOLATED
PACT120D3-T4-ZS	34 in	75 in	73 in	1250 lbs	2000 lbs	INTERPOLATED
PACT120D3-T5-ZS	34 in	75 in	73 in	1250 lbs	2000 lbs	INTERPOLATED
PACT120D6-T3-ZS	34 in	75 in	73 in	1250 lbs	2000 lbs	INTERPOLATED
PACT120D6-T4-ZS	34 in	75 in	73 in	1250 lbs	2000 lbs	INTERPOLATED
PACT120D6-T5-ZS	34 in	75 in	73 in	1250 lbs	2000 lbs	INTERPOLATED
PACT140D3-T3-ZS	40 in	85 in	73 in	1300 lbs	2050 lbs	INTERPOLATED
PACT140D3-T4-ZS	40 in	85 in	73 in	1300 lbs	2050 lbs	INTERPOLATED
PACT140D3-T5-ZS	40 in	85 in	73 in	1300 lbs	2050 lbs	INTERPOLATED

Note: All units are constructed out of 11 to 22 Gauge Galvanized Carbon Steel

Drake Refrigeration - PACT Chillers
I. Certified Product Table

	Width	Length	Height	Maximum Weight		Testing Status
				Empty	Operating	
Packaged, Air-Cooled Chillers with Tank (PACT) - Dual Circuit Refrigeration- cont'd						
PACT140D6-T3-ZS	40 in	85 in	73 in	1300 lbs	2050 lbs	INTERPOLATED
PACT140D6-T4-ZS	40 in	85 in	73 in	1300 lbs	2050 lbs	INTERPOLATED
PACT140D6-T5-ZS	40 in	85 in	73 in	1300 lbs	2050 lbs	INTERPOLATED
PACT160D3-T3-ZS	40 in	85 in	73 in	1400 lbs	2525 lbs	INTERPOLATED
PACT160D3-T4-ZS	40 in	85 in	73 in	1400 lbs	2525 lbs	INTERPOLATED
PACT160D3-T5-ZS	40 in	85 in	73 in	1400 lbs	2525 lbs	INTERPOLATED
PACT160D6-T3-ZS	40 in	85 in	73 in	1400 lbs	2525 lbs	INTERPOLATED
PACT160D6-T4-ZS	40 in	85 in	73 in	1400 lbs	2525 lbs	INTERPOLATED
PACT160D6-T5-ZS	40 in	85 in	73 in	1400 lbs	2525 lbs	INTERPOLATED
PACT180D3-T3-ZS	40 in	85 in	73 in	1450 lbs	2575 lbs	INTERPOLATED
PACT180D3-T4-ZS	40 in	85 in	73 in	1450 lbs	2575 lbs	INTERPOLATED
PACT180D3-T5-ZS	40 in	85 in	73 in	1450 lbs	2575 lbs	INTERPOLATED
PACT180D6-T3-ZS	40 in	85 in	73 in	1450 lbs	2575 lbs	INTERPOLATED
PACT180D6-T4-ZS	40 in	85 in	73 in	1450 lbs	2575 lbs	INTERPOLATED
PACT180D6-T5-ZS	40 in	85 in	73 in	1450 lbs	2575 lbs	INTERPOLATED
PACT170D3-T3-ZTS	40 in	85 in	73 in	1500 lbs	2700 lbs	INTERPOLATED
PACT170D3-T4-ZTS	40 in	85 in	73 in	1500 lbs	2700 lbs	INTERPOLATED
PACT172D3-T3-ZTS	40 in	85 in	73 in	1500 lbs	2700 lbs	INTERPOLATED
PACT172D3-T4-ZTS	40 in	85 in	73 in	1500 lbs	2700 lbs	INTERPOLATED
PACT171D3-T3-ZTS	40 in	85 in	73 in	1500 lbs	2700 lbs	INTERPOLATED
PACT171D3-T4-ZTS	40 in	85 in	73 in	1500 lbs	2700 lbs	TR63648-12I-SEI UUT-3

Note: All units are constructed out of 11 to 22 Gauge Galvanized Carbon Steel

Drake Refrigeration - PACT Chillers**II. Certified Subcomponents Table**

Compressor	Manufacturer	Part #	Testing Status
ZR16K4E-PFV (208-230V/60Hz/1Ø)	Copeland	D10-541	TR63648-12I-SEI UUT-1
ZB11KCE-PFV (208-230V/60Hz/1Ø)	Copeland	D10-476	INTERPOLATED
ZB15KCE-PFV (208-230V/60Hz/1Ø)	Copeland	D10-465	INTERPOLATED
ZB15KCE-TF5 (208-230V/60Hz/3Ø)	Copeland	D10-466	INTERPOLATED
ZB15KCE-TFD (460V/60Hz/3Ø)	Copeland	D10-467	INTERPOLATED
ZB19KCE-PFV (208-230V/60Hz/1Ø)	Copeland	D10-484	INTERPOLATED
ZB19KCE-TF5 (208-230V/60Hz/3Ø)	Copeland	D10-485	INTERPOLATED
ZB19KCE-TFD (460V/60Hz/3Ø)	Copeland	D10-486	INTERPOLATED
ZB26KCE-PFV (208-230V/60Hz/1Ø)	Copeland	D10-487	INTERPOLATED
ZB26KCE-TF5 (208-230V/60Hz/3Ø)	Copeland	D10-488	INTERPOLATED
ZB26KCE-TFD (460V/60Hz/3Ø)	Copeland	D10-489	INTERPOLATED
ZB26KCE-TFE (575V/60Hz/3Ø)	Copeland	N/A	INTERPOLATED
ZB30KCE-PFV (208-230V/60Hz/1Ø)	Copeland	D10-436	INTERPOLATED
ZB30KCE-TF5 (208-230V/60Hz/3Ø)	Copeland	D10-437	INTERPOLATED
ZB30KCE-TFD (460V/60Hz/3Ø)	Copeland	D10-438	INTERPOLATED
ZB30KCE-TFE (575V/60Hz/3Ø)	Copeland	N/A	INTERPOLATED
ZBD30KCE-TFD (460V/60Hz/3Ø)	Copeland	N/A	INTERPOLATED
ZBD30KCE-TF5 (208-230V/60Hz/3Ø)	Copeland	N/A	INTERPOLATED
ZBD30KCE-TFE (575V/60Hz/3Ø)	Copeland	N/A	INTERPOLATED
ZB38KCE-PFV (208-230V/60Hz/1Ø)	Copeland	D10-451	INTERPOLATED
ZB38KCE-TF5 (208-230V/60Hz/3Ø)	Copeland	D10-452	INTERPOLATED
ZB38KCE-TFD (460V/60Hz/3Ø)	Copeland	D10-453	INTERPOLATED
ZB38KCE-TFE (575V/60Hz/3Ø)	Copeland	D10-619	INTERPOLATED
ZBD38KCE-TF5 (208-230V/60Hz/3Ø)	Copeland	N/A	INTERPOLATED
ZBD38KCE-TFD (460V/60Hz/3Ø)	Copeland	N/A	INTERPOLATED
ZBD38KCE-TFE (575V/60Hz/3Ø)	Copeland	N/A	INTERPOLATED
ZBD38KCE-TF7 (380V/60Hz/3Ø)	Copeland	N/A	INTERPOLATED
ZB42KCE-PFV (208-230V/60Hz/1Ø)	Copeland	D10-448	INTERPOLATED
ZB45KCE-TF5 (208-230V/60Hz/3Ø)	Copeland	D10-449	INTERPOLATED
ZB45KCE-TFD (460V/60Hz/3Ø)	Copeland	D10-450	INTERPOLATED
ZB45KCE-TFE (575V/60Hz/3Ø)	Copeland	D10-509	INTERPOLATED
ZBD45KCE-TF5 (208-230V/60Hz/3Ø)	Copeland	N/A	INTERPOLATED
ZBD45KCE-TFD (460V/60Hz/3Ø)	Copeland	N/A	INTERPOLATED
ZBD45KCE-TFE (575V/60Hz/3Ø)	Copeland	N/A	INTERPOLATED
ZBD45KCE-TF7 (380V/60Hz/3Ø)	Copeland	N/A	INTERPOLATED
ZB58KCE-TF5 (208-230V/60Hz/3Ø)	Copeland	D10-479	INTERPOLATED
ZB58KCE-TFD (460V/60Hz/3Ø)	Copeland	D10-480	INTERPOLATED
ZB58KCE-TFE (575V/60Hz/3Ø)	Copeland	D10-554	INTERPOLATED
ZBD58KCE-TF5 (208-230V/60Hz/3Ø)	Copeland	N/A	INTERPOLATED
ZBD58KCE-TFD (460V/60Hz/3Ø)	Copeland	N/A	INTERPOLATED
ZBD58KCE-TF7 (380V/60Hz/3Ø)	Copeland	N/A	INTERPOLATED
ZB66KCE-TF5 (208-230V/60Hz/3Ø)	Copeland	D10-471	INTERPOLATED
ZB66KCE-TFD (460V/60Hz/3Ø)	Copeland	D10-472	INTERPOLATED
ZB66KCE-TFE (575V/60Hz/3Ø)	Copeland	D10-473	INTERPOLATED
ZB76KCE-TF5 (208-230V/60Hz/3Ø)	Copeland	D10-439	INTERPOLATED
ZB76KCE-TFD (460V/60Hz/3Ø)	Copeland	D10-440	INTERPOLATED
ZB76KCE-TFE (575V/60Hz/3Ø)	Copeland	D10-494	INTERPOLATED
ZBD76KCE-TFD (460V/60Hz/3Ø)	Copeland	N/A	INTERPOLATED
ZBD76KCE-TF5 (208-230V/60Hz/3Ø)	Copeland	N/A	INTERPOLATED

FORELL/ELSESSER ENGINEERS, INC.

Structural Engineers

Drake Refrigeration - PACT Chillers

II. Certified Subcomponents Table

Compressor - cont'd	Manufacturer	Part #	Testing Status
ZBD76KCE-TF7 (380V/60Hz/3Ø)	Copeland	N/A	INTERPOLATED
ZB95KCE-TW5 (208-230V/60Hz/3Ø)	Copeland	D10-561	INTERPOLATED
ZB95KCE-TWD (460V/60Hz/3Ø)	Copeland	D10-562	INTERPOLATED
ZB95KCE-TWE (575V/60Hz/3Ø)	Copeland	D10-563	INTERPOLATED
ZB114KCE-TW5 (208-230V/60Hz/3Ø)	Copeland	D10-564	INTERPOLATED
ZB114KCE-TWD (460V/60Hz/3Ø)	Copeland	D10-565	INTERPOLATED
ZB114KCE-TWE (575V/60Hz/3Ø)	Copeland	D10-566	INTERPOLATED
ZR125KCE-TF5 (208-230V/60Hz/3Ø)	Copeland	D10-581	INTERPOLATED
ZR125KCE-TFD (460V/60Hz/3Ø)	Copeland	D10-582	TR63648-12I-SEI UUT-3
ZR125KCE-TFE (575V/60Hz/3Ø)	Copeland	D10-583	INTERPOLATED
ZRD125KCE-TF5 (208-230V/60Hz/3Ø)	Copeland	D10-584	INTERPOLATED
ZRD125KCE-TFD (460V/60Hz/3Ø)	Copeland	D10-585	TR63648-12I-SEI UUT-3
ZRD125KCE-TFE (575V/60Hz/3Ø)	Copeland	D10-586	INTERPOLATED
Condensers	Manufacturer	Part #	Testing Status
COIL 28FL x 16FH x 2 ROW	KEEPRITE	D20-030	TR63648-12I-SEI UUT-1
COIL 28FL x 16FH x 3 ROW	KEEPRITE	D20-031	INTERPOLATED
COIL 30FL x 24FH x 3 ROW	KEEPRITE	D20-032	INTERPOLATED
COIL 40FL x 24FH x 3 ROW	KEEPRITE	D20-033	INTERPOLATED
COIL 50FL x 24FH x 3 ROW	KEEPRITE	D20-034	INTERPOLATED
COIL 50FL x 24FH x 4 ROW	KEEPRITE	D20-035	INTERPOLATED
COIL 32FL x 32FH x 2 ROW	KEEPRITE	D20-036	INTERPOLATED
COIL 31FL x 36FH x 4 ROW	KEEPRITE	D20-037	TR63648-12I-SEI UUT-3
Thermoexpansion Valve	Manufacturer	Part #	Testing Status
EFVE1-1/2CP100	SPORLAN	D80-252	TR63648-12I-SEI UUT-1
EFSE1-1/2CP115	SPORLAN	D80-271	INTERPOLATED
Efve1-1/2cp100	SPORLAN	D80-252	INTERPOLATED
Efse1-1/2-cp115	SPORLAN	D80-271	INTERPOLATED
Efve2-cp100	SPORLAN	D80-243	INTERPOLATED
Ebfse-ccp115	SPORLAN	D80-279	INTERPOLATED
Ebfse-bcp115	SPORLAN	D80-290	INTERPOLATED
Ebfve-bcp100	SPORLAN	D80-287	INTERPOLATED
Efve3-cp100	SPORLAN	D80-244	INTERPOLATED
Y735sve4cp100	SPORLAN	D80-045	INTERPOLATED
Y735sve5cp100	SPORLAN	D80-097	INTERPOLATED
Ebsse6cp115	SPORLAN	D80-285	INTERPOLATED
Ebsse7-1/2cp115	SPORLAN	D80-219	INTERPOLATED
Y735sve8cp100	SPORLAN	D80-110	TR63648-12I-SEI UUT-3
Ose9cp115	SPORLAN	D80-262	INTERPOLATED
Y735sve10cp100	SPORLAN	D80-111	INTERPOLATED
Y735ebsve11cp100	SPORLAN	D80-212	INTERPOLATED
Ose12cp115	SPORLAN	D80-284	INTERPOLATED
Fan Motor	Manufacturer	Part #	Testing Status
1/2 HP 1075 RPM S2	NIDEC MTR CORP.	D30-051	TR63648-12I-SEI UUT-1
1/2 HP 1075 RPM S4	NIDEC MTR CORP.	D30-052	TR63648-12I-SEI UUT-3
Fan Blades	Manufacturer	Part #	Testing Status
ZS2003-30 20" 3 BLADE 30°	Revcor	D40-033	TR63648-12I-SEI UUT-1
ZS2403-34 24" 3 BLADE 34°	Revcor	D40-034	TR63648-12I-SEI UUT-3

Drake Refrigeration - PACT Chillers
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Evaporators	Manufacturer	Part #	Testing Status
AC30-10EQS	ALFA LAVAL	D60-633	TR63648-12I-SEI UUT-1
AC30-14EQS	ALFA LAVAL	D60-634	INTERPOLATED
AC30-20EQS	ALFA LAVAL	D60-635	INTERPOLATED
Ac50-16hx S11	ALFA LAVAL	D60-493	INTERPOLATED
Ac50-20hx S11	ALFA LAVAL	D60-494	INTERPOLATED
Ac50-26hx S21	ALFA LAVAL	D60-495	INTERPOLATED
Ac50-28hy S21	ALFA LAVAL	D60-496	INTERPOLATED
Ac50-42hx S21	ALFA LAVAL	D60-497	INTERPOLATED
Ac50-48hx S24	ALFA LAVAL	D60-498	INTERPOLATED
Ac50-54hx S24	ALFA LAVAL	D60-499	INTERPOLATED
Ac50-64hx S25	ALFA LAVAL	D60-500	INTERPOLATED
Ac50-70hx S25	ALFA LAVAL	D60-501	INTERPOLATED
Ac50-80hx R49	ALFA LAVAL	D60-502	INTERPOLATED
Ac50-90hy R49	ALFA LAVAL	D60-503	INTERPOLATED
Ac50-100hx R49	ALFA LAVAL	D60-504	INTERPOLATED
AC70-14my S21	ALFA LAVAL	D60-605	INTERPOLATED
Ac70-18my S21	ALFA LAVAL	D60-606	INTERPOLATED
Ac70-22my S21	ALFA LAVAL	D60-607	INTERPOLATED
Ac70-26my S21	ALFA LAVAL	D60-608	INTERPOLATED
Ac70-32my S21	ALFA LAVAL	D60-609	INTERPOLATED
Ac70-42my S24	ALFA LAVAL	D60-610	INTERPOLATED
Ac70-50my S24	ALFA LAVAL	D60-611	INTERPOLATED
Ac70-58my S24	ALFA LAVAL	D60-612	INTERPOLATED
Ac70-62my S25	ALFA LAVAL	D60-613	INTERPOLATED
Ac70-68my R49	ALFA LAVAL	D60-614	INTERPOLATED
Ac70-78my R49	ALFA LAVAL	D60-615	INTERPOLATED
Ac70-90my R49	ALFA LAVAL	D60-632	INTERPOLATED
Ac70-118my R49	ALFA LAVAL	D60-653	INTERPOLATED
Ac80-30dq Q18	ALFA LAVAL	D60-506	INTERPOLATED
Ac80-42dq Q18	ALFA LAVAL	D60-454	INTERPOLATED
Ac80-54dq Q18	ALFA LAVAL	D60-439	INTERPOLATED
Ac80-66dq Q18	ALFA LAVAL	D60-455	INTERPOLATED
Ac80-82dq Q18	ALFA LAVAL	D60-456	INTERPOLATED
Ac80-98dq Q19	ALFA LAVAL	D60-457	INTERPOLATED
Ac130-70dq Y97	ALFA LAVAL	D60-458	INTERPOLATED
Ac130-82dq Y97	ALFA LAVAL	D60-459	INTERPOLATED
Ach230dq-22h	ALFA LAVAL	D60-659	INTERPOLATED
Ach230dq-30h	ALFA LAVAL	D60-660	INTERPOLATED
Ach230dq-38h	ALFA LAVAL	D60-661	INTERPOLATED
Ach230dq-50h	ALFA LAVAL	D60-662	TR63648-12I-SEI UUT-3
Ach230dq-58h	ALFA LAVAL	D60-663	INTERPOLATED
Ach230dq-70h	ALFA LAVAL	D60-664	INTERPOLATED
Ach230dq-90h	ALFA LAVAL	D60-671	INTERPOLATED

Drake Refrigeration - PACT Chillers**II. Certified Subcomponents Table**

Pump	Manufacturer	Part #	Testing Status
Pump/mtr Assy 1ms1c1f4 1/2HP	GOULDS	D35-019	TR63648-12I-SEI UUT-1
Pump/mtr Assy 1st1c2e4 1/2hp	GOULDS	D35-017	INTERPOLATED
Pump/mtr Assy 1ms1c2f4 1/2hp	GOULDS	D35-023	INTERPOLATED
Pump/mtr Assy 1ms1c2e4 1/2hp	GOULDS	D35-024	INTERPOLATED
Pump/mtr Assy 1svd1c1b0 1/2hp	GOULDS	D35-050	INTERPOLATED
Pump/mtr Assy 1st1c3e4 1/2hp	GOULDS	D35-069	INTERPOLATED
5gbs0312g4 1/2hp 7 Stage Pump	GOULDS	D35-089	INTERPOLATED
5gbs0511j4 1/2hp 9 Stage Pump	GOULDS	D35-108	INTERPOLATED
5gbs0512j4 1/2hp 9 Stage Pump	GOULDS	D35-109	INTERPOLATED
Pump/mtr Assy 1st1c2e2 1/2hp	GOULDS	D35-161	INTERPOLATED
Pump/mtr Assy 1st1c2e6 1/2hp	GOULDS	D35-167	INTERPOLATED
Pump/mtr Assy 1ms1c5e4 1/2hp	GOULDS	D35-194	INTERPOLATED
Pump/mtr Assy 1st1c5e4 1/2hp	GOULDS	D35-196	INTERPOLATED
Pump/mtr Assy 1bf10712 3/4hp	GOULDS	D35-004	INTERPOLATED
Pump/mtr Assy 1bf10734 3/4hp	GOULDS	D35-006	INTERPOLATED
Pump/mtr Assy 1ms1d1d4 3/4hp	GOULDS	D35-021	INTERPOLATED
Pump/mtr Assy 1ms1d2d4 3/4hp	GOULDS	D35-025	INTERPOLATED
Pump/mtr Assy 2ms1d2f4 3/4hp	GOULDS	D35-036	INTERPOLATED
Pump/mtr Assy 1svd1d1c0 3/4hp	GOULDS	D35-051	INTERPOLATED
Pump/mtr Assy 1svd1d2c0 3/4hp	GOULDS	D35-056	INTERPOLATED
Pump/mtr Assy 1st1d3d4 3/4hp	GOULDS	D35-065	INTERPOLATED
Pump/mtr Assy T31h 3/4hp	GOULDS	D35-091	INTERPOLATED
Pump/mtr Assy Pra150m 3/4hp	GOULDS	D35-092	INTERPOLATED
Pump/mtr Assy T31h 3/4hp	GOULDS	D35-093	INTERPOLATED
Pump/mtr Assy T41g Bf 3/4hp	GOULDS	D35-097	INTERPOLATED
Pump/mtr Assy 3/4hp 3450rpm	GOULDS	D35-099	INTERPOLATED
Pump/mtr Assy 1ms1d2e4 3/4hp	GOULDS	D35-118	INTERPOLATED
Pump/mtr Assy 1ms1d5d4 3/4hp	GOULDS	D35-138	INTERPOLATED
Pump/mtr Assy 2ms1d5f4 3/4hp	GOULDS	D35-139	INTERPOLATED
Pump/mtr Assy 2st1d5f4 3/4hp	GOULDS	D35-144	INTERPOLATED
Pump/mtr Assy 2st1d3f4 3/4hp	GOULDS	D35-158	INTERPOLATED
Pump/mtr Assy 2st1d2f2 3/4hp	GOULDS	D35-160	INTERPOLATED
5gbs0713p4 3/4hp 14 Stage Pump	GOULDS	D35-166	INTERPOLATED
Pump/mtr Assy 1st1d1d4 3/4hp	GOULDS	D35-175	INTERPOLATED
Pmp/mtr Assy Acdu70/17d3c 3/4hp	GOULDS	D35-189	INTERPOLATED
5gbs0712p4 3/4hp 14 Stage Pump	GOULDS	D35-200	INTERPOLATED
Pump/mtr Assy 1ms1e2c4 1hp	GOULDS	D35-030	INTERPOLATED
Pump/mtr Assy 1svb1e4d0 1hp	GOULDS	D35-053	INTERPOLATED
Pump/mtr Assy 2ms1e2e4 1hp	GOULDS	D35-057	INTERPOLATED
Pump/mtr Assy 2ms1e1e4 1hp	GOULDS	D35-073	INTERPOLATED
Pump/mtr Assy 4sh2e2c0 1hp	GOULDS	D35-087	INTERPOLATED
Pump/mtr Assy 1ms1e1c4 1hp	GOULDS	D35-098	INTERPOLATED
Pump/mtr Assy 3ms1e2e4 1hp	GOULDS	D35-103	INTERPOLATED
Pump/mtr Assy 3st1e3e4 1hp	GOULDS	D35-106	INTERPOLATED
Pump/mtr Assy 1st1e3d4 1hp	GOULDS	D35-120	INTERPOLATED
Pump/mtr Assy 3ms1e1e4 1hp	GOULDS	D35-125	INTERPOLATED
Pump/mtr Assy 2st1e3e4 1hp	GOULDS	D35-157	INTERPOLATED
Pump/mtr Assy 2st1e7f4 1hp	GOULDS	D35-184	INTERPOLATED

Drake Refrigeration - PACT Chillers**II. Certified Subcomponents Table**

Pumps - cont'd	Manufacturer	Part #	Testing Status
Pump/mtr Assy 1ms1e5c4 1hp	GOULDS	D35-195	INTERPOLATED
Pump/mtr Assy 2ms1e5e4 1hp	GOULDS	D35-202	INTERPOLATED
Pump/mtr Assy 1bf11534 1-1/2hp	GOULDS	D35-009	INTERPOLATED
Pump/mtr Assy Hsc15b 1-1/2hp	GOULDS	D35-014	INTERPOLATED
Pump/mtr Assy 1ms1f1b4 1-1/2hp	GOULDS	D35-022	INTERPOLATED
Pump/mtr Assy 1ms1f2b4 1-1/2hp	GOULDS	D35-026	INTERPOLATED
Pump/mtr Assy 1st1f2b4 1-1/2hp	GOULDS	D35-032	INTERPOLATED
Pump/mtr Assy 3ms1f2d4 1-1/2hp	GOULDS	D35-043	INTERPOLATED
Pump/mtr Assy 2ms1f2d4 1-1/2hp	GOULDS	D35-058	INTERPOLATED
Pump/mtr Assy 1ms1f2b4 1-1/2hp	GOULDS	D35-063	INTERPOLATED
Pump/mtr Assy 2ms1f1d4 1-1/2hp	GOULDS	D35-070	INTERPOLATED
Pump/mtr Assy 2st1f3d4 1-1/2hp	GOULDS	D35-094	INTERPOLATED
Pump/mtr Assy 3st1f3d4 1-1/2hp	GOULDS	D35-101	INTERPOLATED
Pump/mtr Assy 3ms1f2d4 1-1/2hp	GOULDS	D35-104	INTERPOLATED
Pump/mtr Assy 1st1f3b4 1-1/2hp	GOULDS	D35-128	INTERPOLATED
Pump/mtr Assy 1st1f5b4 1-1/2hp	GOULDS	D35-145	INTERPOLATED
Pump/mtr Assy 1st1f6b4 1-1/2hp	GOULDS	D35-154	INTERPOLATED
Pump/mtr Assy 1ms1f2c4 1-1/2hp	GOULDS	D35-190	INTERPOLATED
Pump/mtr Assy 1bf22034 2hp	GOULDS	D35-008	INTERPOLATED
Pump/mtr Assy Lca1g2d0 2hp	GOULDS	D35-031	INTERPOLATED
Pump/mtr Assy 2ms1g2c4 2hp	GOULDS	D35-034	INTERPOLATED
Pump/mtr Assy 2st1g2c4 2hp	GOULDS	D35-035	INTERPOLATED
Pump/mtr Assy 1ms1g2a4 2hp	GOULDS	D35-068	INTERPOLATED
Pump/mtr Assy C25024b2d3l 2hp	GOULDS	D35-076	INTERPOLATED
Pump/mtr Assy 2ms1g1c4 2hp	GOULDS	D35-082	INTERPOLATED
Pump/mtr Assy Lca1g1d0 2hp	GOULDS	D35-086	INTERPOLATED
Pump/mtr Assy 2st1g3c4 2hp	GOULDS	D35-095	INTERPOLATED
Pump/mtr Assy 1st1g3a4 2hp	GOULDS	D35-096	INTERPOLATED
Pump/mtr Assy 3ms1g2c4 2hp	GOULDS	D35-100	INTERPOLATED
Pump/mtr Assy 1ms1g1a4 2hp	GOULDS	D35-110	INTERPOLATED
Pump/mtr Assy 1st1g3b4 2hp	GOULDS	D35-121	INTERPOLATED
Pump/mtr Assy 3st1g3c4 2hp	GOULDS	D35-123	INTERPOLATED
Pump/mtr Assy 1st1g2a6 2hp	GOULDS	D35-168	INTERPOLATED
Pump/mtr Assy 1st1g1a4 2hp	GOULDS	D35-174	INTERPOLATED
Pump/mtr Assy 1ms1h2a4 3hp	GOULDS	D35-033	INTERPOLATED
Pump/mtr Assy 2ms1h2a4 3hp	GOULDS	D35-049	INTERPOLATED
Pump/mtr Assy 3ms1h2a4 3hp	GOULDS	D35-066	INTERPOLATED
Pump/mtr Assy C25624b3d3l 3hp	GOULDS	D35-079	INTERPOLATED
Pump/mtr Assy 2ms1h1a4 3hp	GOULDS	D35-111	INTERPOLATED
Pump/mtr Assy 3ms1h5a4 3hp	GOULDS	D35-112	INTERPOLATED
Pump/mtr Assy 1st1h2a2 3hp	GOULDS	D35-114	INTERPOLATED
Pump/mtr Assy 2st1h9a4pe 3hp	GOULDS	D35-131	INTERPOLATED
Pump/mtr Assy 2st1h2a4 3hp	GOULDS	D35-141	INTERPOLATED
Pump/mtr Assy 2ms1h2b4 3hp	GOULDS	D35-151	INTERPOLATED
Pump/mtr Assy 3st1h3a4 3hp	GOULDS	D35-171	INTERPOLATED
Pump/mtr Assy 2st1h3a4 3hp	GOULDS	D35-173	INTERPOLATED
Pump/mtr Assy 3st1h2a4 3hp	GOULDS	D35-177	INTERPOLATED
Pmp/mtr Assy Acdu200/330d3c 3hp	GOULDS	D35-187	INTERPOLATED
Pmp/mtr Assy Acdu120/530d3c 3hp	GOULDS	D35-188	INTERPOLATED

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Drake Refrigeration - PACT Chillers**II. Certified Subcomponents Table**

Pumps - cont'd	Manufacturer	Part #	Testing Status
Pump/mtr Assy 2ms1h5a4 3hp	GOULDS	D35-203	INTERPOLATED
ACDU200/330 D3C 3 HP	GOULDS	D35-187	TR63648-12I-SEI UUT-3
Pump/mtr Assy 3bf15035 5hp	GOULDS	D35-007	INTERPOLATED
Pump/mtr Assy Lcc1j2d0 5hp	GOULDS	D35-037	INTERPOLATED
Pump/mtr Assy 5st15035 5hp Obs	GOULDS	D35-052	INTERPOLATED
Pump/mtr Assy 3ms1j2g4 5hp	GOULDS	D35-054	INTERPOLATED
Pump/mtr Assy 22st2j2e0 5hp Ob	GOULDS	D35-064	INTERPOLATED
Pump/mtr Assy 2ms1j2g4 5hp	GOULDS	D35-067	INTERPOLATED
Pump/mtr Assy 5sh1j2g2 5hp	GOULDS	D35-107	INTERPOLATED
Pump/mtr Assy 5sh1j3g2 5hp	GOULDS	D35-115	INTERPOLATED
Pump/mtr Assy 3svc1j2e0h 5hp	GOULDS	D35-126	INTERPOLATED
Pump/mtr Assy 2svc1j1l0h 5hp	GOULDS	D35-127	INTERPOLATED
Pump/mtr Assy 2ms1j2k4 5hp	GOULDS	D35-130	INTERPOLATED
Pump/mtr Assy 2st1j3g4 5hp	GOULDS	D35-132	INTERPOLATED
Pump/mtr Assy 3st1j3g4 5hp	GOULDS	D35-170	INTERPOLATED
Pump/mtr Assy 3st1j2g6 5hp	GOULDS	D35-172	INTERPOLATED
Pump/mtr Assy 5sh2j52f0 5hp	GOULDS	D35-193	INTERPOLATED
S/S Tank	Manufacturer	Part #	Testing Status
30 Gallon s/s 18d x 25 long	SCHILLINGER	D60-111	TR63648-12I-SEI UUT-1
60 Gallon s/s 24d x 32 long	SCHILLINGER	D60-112	INTERPOLATED
60 Gal s/s w/ liquid level sw conn	SCHILLINGER	D60-426	INTERPOLATED
60 Gal s/s w/ 2 liquid level sw conn	SCHILLINGER	D60-433	INTERPOLATED
90 Gallon s/s 24d x 45 long	SCHILLINGER	D60-113	TR63648-12I-SEI UUT-3
90 Gal s/s w/ liquid level sw conn	SCHILLINGER	D60-427	INTERPOLATED
90 Gal s/s w/ 2 liquid level sw conn	SCHILLINGER	D60-434	INTERPOLATED
90 Gal s/s w/ two inch conn	SCHILLINGER	D60-685	INTERPOLATED
135 Gallon s/s 24d x 69 long	SCHILLINGER	D60-114	INTERPOLATED
135 Gal s/s w/ liquid level sw conn	SCHILLINGER	D60-428	INTERPOLATED
135 Gal s/s w/ 2 liquid level sw conn	SCHILLINGER	D60-435	INTERPOLATED
135 Gal s/s w/ 2.5 inch conn	SCHILLINGER	D60-680	INTERPOLATED
Transformers	Manufacturer	Part #	Testing Status
Transformer .05kva 9070t50d37	SQUARE D	D59-275	INTERPOLATED
Transformer .05kva 9070t50d19	SQUARE D	D59-333	INTERPOLATED
Transformer .05kva 9070t50d13	SQUARE D	D59-334	INTERPOLATED
Transformer .05kva 9070t50d12	SQUARE D	D59-339	INTERPOLATED
Transformer .1kva 9070t100d12	SQUARE D	D59-286	INTERPOLATED
Transformer .1kva 9070t100d19	SQUARE D	D59-198	TR63648-12I-SEI UUT-1
Transformer .1kva 9070t100d36	SQUARE D	D59-360	INTERPOLATED
Transformer 100sv51a 100va	SQUARE D	D59-435	INTERPOLATED
Transformer .1kva 9070t100d13	SQUARE D	D59-457	INTERPOLATED
Transformer .15kva 9070t150d12	SQUARE D	D59-240	INTERPOLATED
Transformer .15kva 9070t150d37	SQUARE D	D59-340	INTERPOLATED
Transformer 150sv51a 150va	SQUARE D	D59-393	INTERPOLATED
Transformer 150sv1a 150va	SQUARE D	D59-416	INTERPOLATED
Transformer .15kva 9070t150d31	SQUARE D	D59-450	INTERPOLATED
Transformer .25kva 9070t250d19	SQUARE D	D59-166	TR63648-12I-SEI UUT-3
Transformer .25kva 9070t250d12	SQUARE D	D59-271	INTERPOLATED
Transformer .25kva 9070t250d36	SQUARE D	D59-274	INTERPOLATED

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Transformers - cont'd	Manufacturer	Part #	Testing Status
Transformer .25kva 9070t250d31	SQUARE D	D59-284	INTERPOLATED
Transformer .25kva 9070t250d15	SQUARE D	D59-359	INTERPOLATED
Transformer .25kva 9070t250d37	SQUARE D	D59-383	INTERPOLATED
Transformer 250sv1b 250va	SQUARE D	D59-433	TR63648-12I-SEI UUT-3
Transformer 250sv51b 250va	SQUARE D	D59-434	INTERPOLATED
Transformer .35kva 9070t350d19	SQUARE D	D59-315	INTERPOLATED
Transformer .35kva 9070t350d37	SQUARE D	D59-395	INTERPOLATED
Transformer .35kva 9070t350d12	SQUARE D	D59-404	INTERPOLATED
Transformer .35kva 9070t350d36	SQUARE D	D59-428	INTERPOLATED
Transformer .5kva 9070t500d19	SQUARE D	D59-298	INTERPOLATED
Transformer .5kva 9070t500d31	SQUARE D	D59-400	INTERPOLATED
Transformer .5kva 9070t500d37	SQUARE D	D59-427	INTERPOLATED
Transformer .75kva 9070t750d19	SQUARE D	D59-507	INTERPOLATED
Transformer 2kva 9070t2000d1	SQUARE D	D59-401	INTERPOLATED
Fuses	Manufacturer	Part #	Testing Status
Fuse Ccmr2/10 600vac	SQUARE D	D53-121	INTERPOLATED
Fuse Flnr3/10 250vac	SQUARE D	D53-120	INTERPOLATED
Fuse Ccmr3/10 600vac	SQUARE D	D53-067	INTERPOLATED
Fuse Ccmr1/2 600vac	SQUARE D	D53-107	INTERPOLATED
Fuse Frn-r-6/10 250vac	SQUARE D	D53-058	TR63648-12I-SEI UUT-1
Fuse Lp-cc-8/10 600vac	SQUARE D	D53-068	INTERPOLATED
Fuse Flnr-1a 250vac	SQUARE D	D53-132	INTERPOLATED
Fuse Lp-cc-1 600vac	SQUARE D	D53-131	INTERPOLATED
Fuse Lp-cc-1-1/4	SQUARE D	D53-114	INTERPOLATED
Fuse Flnr1-4/10 250vac	SQUARE D	D53-059	INTERPOLATED
Fuse Ccmr-1-1/2 600vac	SQUARE D	D53-123	INTERPOLATED
Fuse Flnr2-1/4 250 Vac	SQUARE D	D53-115	INTERPOLATED
Fuse Ccmr2 600vac	SQUARE D	D53-069	INTERPOLATED
Fuse Flnr2-1/2 250 Vac	SQUARE D	D53-136	INTERPOLATED
Fuse Frn-r-3 250vac	SQUARE D	D53-092	INTERPOLATED
Fuse Ccmr3 600vac	SQUARE D	D53-070	TR63648-12I-SEI UUT-3
Fuse Frn-r-5 250vac	SQUARE D	D53-006	INTERPOLATED
Fuse Lp-cc-4 600vac	SQUARE D	D53-126	INTERPOLATED
Fuse Lp-cc5 5a 600v Time Delay	SQUARE D	D53-053	INTERPOLATED
Fuse Ccmr-5 600vac	SQUARE D	D53-071	INTERPOLATED
Fuse Flnr6 250v Dual	SQUARE D	D53-109	TR63648-12I-SEI UUT-1
Fuse Ccmr6 600vac	SQUARE D	D53-118	INTERPOLATED
Fuse Frn-r-7 250vac	SQUARE D	D53-007	INTERPOLATED
Fuse Ccmr-7 600vac	SQUARE D	D53-072	INTERPOLATED
Fuse Frn-r-8 250vac	SQUARE D	D53-117	INTERPOLATED
Fuse Lp-cc-8 600vac	SQUARE D	D53-093	INTERPOLATED
Fuse Frn-r-9 250vac	SQUARE D	D53-138	INTERPOLATED
Fuse Lp-cc-9 600vac	SQUARE D	D53-119	INTERPOLATED
Fuse Frnr-10 10a 250v	SQUARE D	D53-054	INTERPOLATED
Fuse Frn-r-10 250 Vac	SQUARE D	D53-060	INTERPOLATED
Fuse Ccmr-10 600vac	SQUARE D	D53-073	INTERPOLATED
Fuse Flnr12 250 Vac Fuse	SQUARE D	D53-061	INTERPOLATED
Fuse Lpcc-12 600vac	SQUARE D	D53-074	TR63648-12I-SEI UUT-3

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II. Certified Subcomponents Table

Fuses - cont'd	Manufacturer	Part #	Testing Status
Fuse Flnr15 15a 250v	SQUARE D	D53-008	TR63648-12I-SEI UUT-1
Fuse Lc-cc-15 600v	SQUARE D	D53-045	INTERPOLATED
Fuse Flsr15 15a 600v	SQUARE D	D53-101	INTERPOLATED
Fuse Frn-r-20 250vac	SQUARE D	D53-018	TR63648-12I-SEI UUT-1
Fuse Ccmr20 600vac	SQUARE D	D53-046	INTERPOLATED
Fuse Flsr20 20a 600v	SQUARE D	D53-102	INTERPOLATED
Fuse Flnr25 Dual Elem 250v	SQUARE D	D53-009	INTERPOLATED
Fuse Flsr25 25a 600v Dual El	SQUARE D	D53-088	INTERPOLATED
Fuse Lp-ccmr25 Dual Elem	SQUARE D	D53-095	INTERPOLATED
Fuse Frn-r-30 250vac	SQUARE D	D53-026	INTERPOLATED
Fuse Lp-cc-30 600vac	SQUARE D	D53-048	INTERPOLATED
Fuse Flsr30 30a 600v	SQUARE D	D53-103	INTERPOLATED
Fuse Frn-r-35 250vac	SQUARE D	D53-062	INTERPOLATED
Fuse Ccmr35 600volt	SQUARE D	D53-075	TR63648-12I-SEI UUT-3
Fuse Flsr35 35a 600v	SQUARE D	D53-104	INTERPOLATED
Fuse Frn-r-40 250vac	SQUARE D	D53-035	INTERPOLATED
Fuse Ccmr40	SQUARE D	D53-108	INTERPOLATED
Fuse Flsr40 40a 600v	SQUARE D	D53-130	INTERPOLATED
Fuse Frn-r-45 250vac	SQUARE D	D53-063	INTERPOLATED
Fuse Ccmr45	SQUARE D	D53-076	INTERPOLATED
Fuse Flsr45 45a 600v Dual El	SQUARE D	D53-094	INTERPOLATED
Fuse Frsr50 50a 600v Dual Elem	SQUARE D	D53-029	INTERPOLATED
Fuse Ccmr50	SQUARE D	D53-077	INTERPOLATED
Fuse Flnr 50 250v	SQUARE D	D53-078	INTERPOLATED
Fuse Flsr50 50a 600v	SQUARE D	D53-124	INTERPOLATED
Fuse Flnr60 250vac	SQUARE D	D53-064	INTERPOLATED
Fuse Frsr60 60a 600v Dual Elem	SQUARE D	D53-023	INTERPOLATED
Fuse Ccmr60	SQUARE D	D53-084	INTERPOLATED
Fuse Flsr60 60a 600v	SQUARE D	D53-105	INTERPOLATED
Fuse Frn-r-70 250vac	SQUARE D	D53-065	INTERPOLATED
Fuse Flsr70 70a 600v Dual Elem	SQUARE D	D53-085	INTERPOLATED
Fuse Frn-r-80 250vac	SQUARE D	D53-066	INTERPOLATED
Fuse Flnr90id Dual Elem	SQUARE D	D53-081	INTERPOLATED
Fuse Flsr80id	SQUARE D	D53-113	INTERPOLATED
Fuse Flsr90 90a 600vac	SQUARE D	D53-096	INTERPOLATED

OSP APPLICATION
Drake Refrigeration – PACT Chillers
UUT Summary Sheet

4.2 Test Summary

TR63648-12I UUT 1

Drake Chiller : PACT12S3-S2-ZS

11-22 Gauge Galvanized Carbon Steel

34"W x 36"L x 60"H, 800 lbs

Floor mounted with (4) ½"-13 Grade 2 bolts



Building Code		Test Criteria	S _{DS} (g)	z/h	Horizontal		Vertical	
					AFLX-H	ARIG-H	AFLX-V	ARIG-V
CBC 2016		ICC-ES AC 156	2.75	1	4.40	3.30	1.83	0.74
Natural Frequencies (Hz)			Test Results					
F-B	S-S	V	The UUT maintained structural integrity and functionality after the AC156 test. Unit full of contents during test.					
7.585	7.958	n/a						

TR63648-12I UUT 1– Internal Components		
Description	Manufacturer	Part Number
ZR16K4E-PFV Compressor	Copeland	D10-541
AC30-10EQS Evaporator	Alfa Laval	D60-633
COIL 28FL x 16FH X 2 ROW Condenser	Keeprite	D20-030
EFVE1-1/2CP100 TXV	Sporlan	D80-252
1/2 HP 1075 RPM S2 Fan Motor	Nidec Motor Corp.	D30-051
ZS2003-30 20" 3 BLADE 30° Fan Blade	Revcor	D40-033
1MS1C1F4 1/2HP Pump	Goulds	D35-019
30 Gallon s/s 18d x 25 long Tank	Schillinger	D60-111
Fuse Frn-r-6/10 250vac	SQUARE D	D53-058
Fuse Flnr6 250v Dual	SQUARE D	D53-109
Fuse Flnr15 15a 250v	SQUARE D	D53-008
Fuse Frn-r-20 250vac	SQUARE D	D53-018
Transformer .1kva 9070t100d19	SQUARE D	D59-198

OSP APPLICATION
Drake Refrigeration – PACT Chillers
UUT Summary Sheet

TR63648-12I UUT 3

Drake Chiller: PACT171D3-T4-ZTS
11-22 Gauge Galvanized Carbon Steel
40"W x 85"L x 73"H, 2700 lbs

Floor mounted with (8) ½"-13 Grade 2 bolts



Building Code		Test Criteria	S _{DS} (g)	z/h	Horizontal		Vertical	
					A _{FLX-H}	A _{RIG-H}	A _{FLX-V}	A _{RIG-V}
CBC 2016		ICC-ES AC 156	2.70	1	4.32	3.24	1.80	0.73
Natural Frequencies (Hz)			Test Results					
F-B	S-S	V	The UUT maintained structural integrity and functionality after the AC156 test. Unit full of contents during test.					
6.753	12.53	35.81						

TR63648-12I UUT 3– Internal Components		
Description	Manufacturer	Part Number
ZR125KCE-TFD Compressor	Copeland	D10-582
ZRD125KCE-TFD Compressor	Copeland	D10-585
AC230DQ-50H Evaporator	Alfa Laval	D60-662
COIL 31FL x 36FH X 4 ROW Condenser	Keeprite	D20-037
Y735sve8cp100 TXV	Sporlan	D80-110
1/2 HP 1075 RPM S4 Fan Motor	Nidec Motor Corp.	D30-052
ZS2403-34 24" 3 BLADE 34° Fan Blade	Revcor	D40-034
ACDU200/330 D3C 3 HP Pump	Goulds	D35-187
90 Gallon s/s 24d x 45 long Tank	Schillinger	D60-113
Fuse Ccrm3 600vac	SQUARE D	D53-070
Fuse Lpcc-12 600vac	SQUARE D	D53-074
Fuse Ccmr35 600volt	SQUARE D	D53-075
Transformer .25kva 9070t250d19	SQUARE D	D59-166
Transformer 250sv1b 250va	SQUARE D	D59-433