



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

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

OFFICE USE ONLY	
APPLICATION #:	OSP – 0055 – 10

OSHPD Special Seismic Certification Preapproval (OSP)

Type: New Renewal

Manufacturer Information

Manufacturer: Climatec

Manufacturer's Technical Representative: Clark Freeman, PE, Engineering Group Supervisor

Mailing Address: 18002 Cowan, Irvine, CA 92614

Telephone: (949) 474-0955 Email: clarkf@climatec.com

Product Information

Product Name: HVAC Control Panels

Product Type: Electrical equipment

Product Model Number: See Attachment

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

General Description: Configurable control panels for HVAC applications. Seismic enhancements made to the test units required to address the anomalies observed during the tests shall be incorporated into the production units.

Mounting Description: Rigid wall mounted

Applicant Information

Applicant Company Name: DYNAMIC CERTIFICATION LABORATORIES

Contact Person: JOSEPH L. LABRIE, S.E., MANAGING PARTNER

Mailing Address: 1315 GREG STREET, SUITE 109, SPARKS, NV 89431

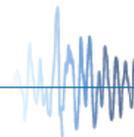
Telephone: (775) 358-5085 Email: LABRIE@MAKEITRIGHT.NET

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: 12/23/13

Title: MANAGING PARTNER Company Name: DYNAMIC CERTIFICATION LABORATORIES

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





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

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

Company Name: DYNAMIC CERTIFICATION LABORATORIES

Name: JOSEPH L. LABRIE, S.E., MANAGING PARTNER California License Number: SE-3566

Mailing Address: 1315 GREG STREET, SUITE 109, SPARKS, NV 89431

Telephone: (775) 358-5085 Email: LABRIE@MAKEITRIGHT.NET

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): _____

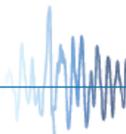
Testing Laboratory

Company Name: Clark Dynamic Test Laboratory, Inc.

Contact Name: J.R. Antenucci

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

Telephone: (412) 387-1001 Email: jantenucci@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) = 1.45

S_{DS} (Design spectral response acceleration at short period, g) = 1.93

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

R_p (Equipment or component response modification factor) = 6.0

Ω_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 attachments

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

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) = _____

Ω_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): _____

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

Signature:  Date: March 25, 2014

Print Name: Timothy J. Piland Title: SSE

Special Seismic Certification Valid Up to : S_{DS} (g) = 1.93 z/h = 1.0

Condition of Approval (if applicable): _____



Special Seismic Certification Certified Component List



Manufacturer: Climatec

Product Line: Control Panels

Components: Enclosures

Tested Enclosures

Manufacturer	Dimensions (in)			Weight	Construction Material	NEMA Rating*	Mounting	Unit
	Width	Height	Depth					
Hoffman	36.00	42.00	9.00	170	CS, 14 ga	NEMA 1	Rigid wall mount	UUT1
	20.00	24.00	6.62	51	CS, 16 ga	NEMA 4	Rigid wall mount	UUT2
	24.00	24.00	6.62	51	CS, 12 ga	NEMA 1	Rigid wall mount	UUT3
	36.00	48.00	8.00	180	CS, 14 ga	NEMA 4	Rigid wall mount	UUT4
	12.13	12.13	6.00	29	CS, 14 ga	NEMA 1 - for PSH500 only	Rigid wall mount	UUT5

Certified Enclosures

Manufacturer	Dimensions (in)			Weight	Construction Material	NEMA Rating*	Mounting
	Width	Height	Depth				
Hoffman	20.00 to 36.00	24.00 to 48.00	6.00 to 9.00	180 lb max	CS, 12 - 16 ga	NEMA 1 NEMA 4 NEMA 12/13	Rigid wall mount
	12.13	12.13	6.00	29	CS, 14 ga	NEMA 1 - for PSH500	Rigid wall mount

Notes:

CS = powder-coated carbon steel

*NEMA ratings:

NEMA 1: Enclosures constructed for indoor use to provide a degree of protection to personnel against access to hazardous parts and to provide a degree of protection of the equipment inside the enclosure against ingress of solid foreign objects.

NEMA 4: Enclosures constructed for either indoor or outdoor use to provide a degree of protection to personnel against access to hazardous parts; to provide a degree of protection of the equipment inside the enclosure against ingress of solid foreign objects; to provide a degree of protection with respect to harmful effects on the equipment due to the ingress of water; and that will be undamaged by the external formation of ice on the enclosure.

NEMA 12/13: Construction identical to NEMA 4, except for the addition of a seal to provide a degree of protection against the spraying, splashing, and seepage of oil and non-corrosive coolants.

Special Seismic Certification Certified Subcomponent List



Manufacturer: Climatec

Product Line: Control Panels

Subcomponents: Control modules

Control Modules				
Model Number	Manufacturer	Product Line	Mounting	Unit
BCM-PWS	Alerton	BACtalk BCM	DIN-Z	UUT4
BCM-ETH			DIN-Z	UUT4
BCM-MDM			DIN-Z	Extrapolated*
BCM-MS/TP			DIN-Z	UUT4
BCM-TUX			DIN-Z	Extrapolated*
BCM-MDBS			DIN-Z	Extrapolated*
BCM-VIG			DIN-Z	Extrapolated*
VLC-444	Alerton	BACtalk VLC	BP	Extrapolated*
VLC-550			BP	UUT4
VLC-651R			BP	Interpolated*
VLC-660			BP	Interpolated
VLC-853			BP	UUT2
VLC-1188			BP	UUT2
VLC-1600			BP	Extrapolated*
VLC-16160			BP	Extrapolated*
VLCA-1688			BP	Extrapolated*
VAV-DD			Alerton	BACtalk VAV
VAV-DD7	BP	Extrapolated*		
VAV-SD	BP	UUT3		
VAV-SD2A	BP	UUT3		
VLX	Alerton	BACtalk VLX	BP	UUT4
VLX-PLATINUM			BP	Extrapolated*
EXP-1048	Alerton	BACtalk EXP	BP	UUT4
EXP-10120			BP	Extrapolated*
EXP-2200			BP	Extrapolated*
FLG-MODBUS	Alerton	BACtalk FLG	BP	Extrapolated*
J-200	Tridium	Vykon JACE	BP	UUT1
J-200e			BP	Interpolated
J-600			BP	UUT1
J-600e			BP	Interpolated
J-700			BP	Extrapolated*
J-700e			BP	Extrapolated*
JACE NWR-PWR			BP	UUT1
NWR-PWR-UN			BP	Extrapolated**
I/O-16			BP	UUT1
I/O-34			BP	UUT1

*Note: Identical/similar to tested component (software change only)

**Note: Identical/similar to JACE NWR-PWR.

Mounting designation:

DIN Z - DIN with zip tie around rail and component

BP - Attached directly to back plane

Special Seismic Certification Certified Subcomponent List



Manufacturer: Climatec

Product Line: Control Panels

Subcomponents: Power supplies, control transformers, relays, ethernet switches, panel lights, LCD panel displays and UPS

Power Supplies

Model Number	Manufacturer	Product Line	Mounting	Unit
PS 247.5	Veris	PS	BP	UUT1
PS 2415			BP	Interpolated
PS 2430			BP	Interpolated
PS 2450			BP	Interpolated
PS 2460			BP	UUT4
PSH100AB10	Functional Devices	PSH	BP	UUT4
PSH100A100AB10			BP	UUT1
PSH500			WALL	UUT5

Control Transformers

Model Number	Manufacturer	Product Line	Mounting	Unit
X100CBB	Veris	X	BP	UUT1, UUT2, UUT3, UUT4, UUT5
X050CBB	Veris	X	BP	UUT1, UUT2, UUT3, UUT4, UUT5

Relays

Model Number	Manufacturer	Description	Mounting	Unit
781XAXM4L-24A	Magnecraft	1PDT 24VAC RELAY	DIN	UUT1, UUT2, UUT3, UUT4, UUT5
781XAXM4L-120A		1PDT 120VAC RELAY	DIN	Extrapolated*
782BXM4L-24A		2PDT 24VAC RELAY	DIN	UUT1, UUT2, UUT3, UUT4, UUT5
782BXM4L-120A		2PDT 120VAC RELAY	DIN	Extrapolated*
783CXM4L-24A		3PDT 24VAC RELAY	DIN	UUT1, UUT2, UUT3, UUT4, UUT5
783CXM4L-120A		3PDT 120VAC RELAY	DIN	Extrapolated*
784DXM4L-24A		4PDT 24VAC RELAY	DIN	UUT1, UUT2, UUT3, UUT4, UUT5
784DXM4L-120A		4PDT 120VAC RELAY	DIN	Extrapolated*

*Note: Extrapolated components are identical in construction to the tested components.

Ethernet Switches

Model Number	Manufacturer	Product Line	Mounting	Unit
EIR208	B&B Electronics	EIR	BP	UUT1
EIR418			BP	UUT4
SFP-100FX-M-2KM-T			BP	UUT4

Miscellaneous Items

Model Number	Manufacturer	Description	Mounting	Unit
APW299D-R-24	IDEC	Red panel light	DOOR	UUT1, UUT2, UUT3, UUT4, UUT5
APW299D-G-24	IDEC	Green panel light	DOOR	UUT1, UUT2, UUT3, UUT4
ASW2K10	IDEC	2 Position Switch	DOOR	UUT1, UUT2, UUT3, UUT4, UUT5
ASW3K20	IDEC	3 Position Switch	DOOR	UUT1, UUT2, UUT3, UUT4, UUT5
LPI-1C	Kele	LPI	DOOR	UUT2*
SDU 500	SOLA-HD	SDU	BP	UUT1
SDU-PMBRK	SOLA-HD	SDU	BP	UUT1

*Note: Subcomponent manufacturing process is ISO 9001 certified.

Mounting designation:

DIN - DIN rail mounted

BP - Attached directly to back plane

Door - Mounted through door

Special Seismic Certification Tested Units



Manufacturer: Climatec

Product Line: Control Panels

Tested and Certified Product Construction:

Enclosures are painted carbon steel (12 - 16 gage), NEMA 1, 4 and 12/13

Tested and Certified Options:

Controllers, power supplies, control transformer, relays, ethernet switches, panel lights and uninterruptible power supplies

Tested and Certified Mounting Description:

Rigid wall mount

Product Line	Model Number	Dimensions (in)			Operating Weight (lb)	Mount	Sds (g), z/h=1	Unit
		Depth	Width	Height				
Control Panels	BV-741412	9.00	36.00	42.00	170	Rigid wall mount	1.93	UUT1
	BV-741410	6.62	20.00	24.00	51	Rigid wall mount	1.93	UUT2
	BV-741413	6.62	24.00	24.00	51	Rigid wall mount	1.93	UUT3
	BV-741411	8.00	36.00	48.00	180	Rigid wall mount	1.93	UUT4
	PSH500A	6.00	12.13	12.13	29	Rigid wall mount	1.93	UUT5

UUT1



UNIT UNDER TEST (UUT) Summary Sheet

Manufacturer: Climatec

Product Line: Control Panels

Model Number: BV-741412

Product Construction Summary:

Enclosure is painted carbon steel (14 gage), NEMA 1

Options / Component Summary:

Controllers, power supply, control transformer, relays, ethernet switches, panel light and uninterruptible power supply

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

UUT Properties

Operating Weight (lb)	Dimensions (in)				Lowest Natural Frequency (Hz)		
		Depth	Width	Height	Front-Back	Side-Side	Vertical
170	UUT1	9.00	36.00	42.00	N/A	N/A	N/A

Seismic Test Parameters

Building Code	Test Criteria	Sds	z/h	Ip	Aflx-H	Arig-H	Aflx-V	Arig-V
CBC 2013	2012 ICC-ES AC156	1.93	1.0	1.5	3.09	2.32	1.29	0.51

Unit Mounting Description:



Exterior view



Interior view

The unit was attached to the rigid test wall using four (4) 5/16"-18 socket head cap screws with nuts, flat and lock washers. A torque of 18 ft-lbs was used for the 5/16" hardware.

Seismic Modifications (Production-Level Requirement):

Modifications to the standard mounting practice are required for seismic installations with controllers, power supplies and UPSs being directly mounted to the backplate. Additionally, only metal door latches shall be used for seismic applications.

UUT2

UNIT UNDER TEST (UUT) Summary Sheet

Manufacturer: Climatec

Product Line: Control Panels

Model Number: BV-741410

Product Construction Summary:

Enclosure is painted carbon steel (16 gage), NEMA 4

Options / Component Summary:

Controller, power supply, control transformer, relays, panel light and LCD panel display

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

UUT Properties

Operating Weight (lb)	Dimensions (in)				Lowest Natural Frequency (Hz)		
		Depth	Width	Height	Front-Back	Side-Side	Vertical
51	UUT2	6.62	20.00	24.00	N/A	N/A	N/A

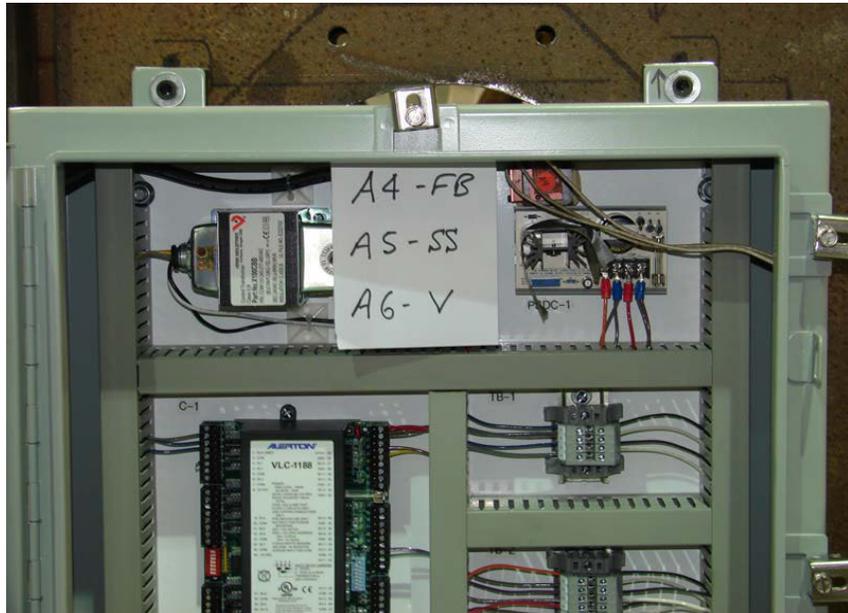
Seismic Test Parameters

Building Code	Test Criteria	Sds	z/h	Ip	Aflx-H	Arig-H	Aflx-V	Arig-V
CBC 2013	2012 ICC-ES AC156	1.93	1.0	1.5	3.09	2.32	1.29	0.51

Unit Mounting Description:



Exterior view



Interior view

The unit was attached to the rigid test wall using four (4) 3/8"-16 socket head cap screws with nuts, flat and lock washers. A torque of 31 ft-lbs was used for the 3/8" hardware.

UUT3

UNIT UNDER TEST (UUT) Summary Sheet

Manufacturer: Climatec

Product Line: Control Panels

Model Number: BV-741413

Product Construction Summary:

Enclosure is painted carbon steel (12 gage), NEMA 1

Options / Component Summary:

Controllers, control transformer, relays, ethernet switches and panel light

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

UUT Properties

Operating Weight (lb)	Dimensions (in)				Lowest Natural Frequency (Hz)		
	UUT3	Depth	Width	Height	Front-Back	Side-Side	Vertical
51	UUT3	6.62	24.00	24.00	N/A	N/A	N/A

Seismic Test Parameters

Building Code	Test Criteria	Sds	z/h	Ip	Aflx-H	Arig-H	Aflx-V	Arig-V
CBC 2013	2012 ICC-ES AC156	1.93	1.0	1.5	3.09	2.32	1.29	0.51

Unit Mounting Description:



Exterior view



Interior view

The unit was attached to the rigid test wall using four (4) 5/16"-18 socket head cap screws with nuts, flat and lock washers. A torque of 18 ft-lbs was used for the 5/16" hardware.

UUT4

UNIT UNDER TEST (UUT) Summary Sheet

Manufacturer: Climatec

Product Line: Control Panels

Model Number: BV-741411

Product Construction Summary:

Enclosure is painted carbon steel (14 gage), NEMA 4

Options / Component Summary:

Controllers, power supplies, control transformer, relays, ethernet switches and panel light

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

UUT Properties

Operating Weight (lb)	Dimensions (in)				Lowest Natural Frequency (Hz)		
		Depth	Width	Height	Front-Back	Side-Side	Vertical
180	UUT4	8.00	36.00	48.00	N/A	N/A	N/A

Seismic Test Parameters

Building Code	Test Criteria	Sds	z/h	Ip	Aflx-H	Arig-H	Aflx-V	Arig-V
CBC 2013	2012 ICC-ES AC156	1.93	1.0	1.5	3.09	2.32	1.29	0.51

Unit Mounting Description:



Exterior view



Interior view (post test)

The unit was attached to the rigid test wall using four (4) 5/16"-18 socket head cap screws with nuts, flat and lock washers. A torque of 18 ft-lbs was used for the 5/16" hardware.

Seismic Modifications (Production-Level Requirement):

1. End stops are used on each end of the DIN rail mounting system to prevent the BCM modules from shifting
2. A 1/8" rubber spacer with adhesive backing is installed under each BCM module to prevent movement or rocking motion of the module.
3. A wire tie is utilized to completely encircle and immobilize the VLC-550 controller, VAV-SD controller, and associated pin connector terminals.

UUT5



UNIT UNDER TEST (UUT) Summary Sheet

Manufacturer: Climatec

Product Line: Control Panels

Model Number: PSH500A

Product Construction Summary:

Enclosure is painted carbon steel (14 gage), NEMA 1

Options / Component Summary:

Power supply and control transformer

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

UUT Properties

Operating Weight (lb)	Dimensions (in)				Lowest Natural Frequency (Hz)		
	UUT5	Depth	Width	Height	Front-Back	Side-Side	Vertical
29	UUT5	6.00	12.13	12.13	N/A	N/A	N/A

Seismic Test Parameters

Building Code	Test Criteria	Sds	z/h	Ip	Aflx-H	Arig-H	Aflx-V	Arig-V
CBC 2013	2012 ICC-ES AC156	1.93	1.0	1.5	3.09	2.32	1.29	0.51

Unit Mounting Description:



Exterior view



Interior view

The unit was attached to the rigid test wall using four (4) 5/16"-18 socket head cap screws with nuts, flat and lock washers. A torque of 18 ft-lbs was used for the 5/16" hardware.