



DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION
FACILITIES DEVELOPMENT DIVISION

APPLICATION FOR HCAI SPECIAL SEISMIC
CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY

APPLICATION #: OSP-0257

HCAI Special Seismic Certification Preapproval (OSP)

Type: New Renewal

Manufacturer Information

Manufacturer: Legrand

Manufacturer's Technical Representative: Sarah Turner

Mailing Address: 2234 Rutherford Road, Carlsbad, CA 92008

Telephone: (760) 804-2814

Email: sarah.turner@legrand.com

Product Information

Product Name: Electrical Control Panels on Life Safety/Critical Branch

Product Type: Lighting Control Panels

Product Model Number: WattStopper LI & LMCP Lighting Control Panels

General Description: Wall-mounted relay-based automatic lighting control panels containing circuit boards, relays, communication cards, contactors, and power supplies.

Mounting Description: Rigid, Wall Mounted

Tested Seismic Enhancements: None

Applicant Information

Applicant Company Name: Manwill Engineering LLC

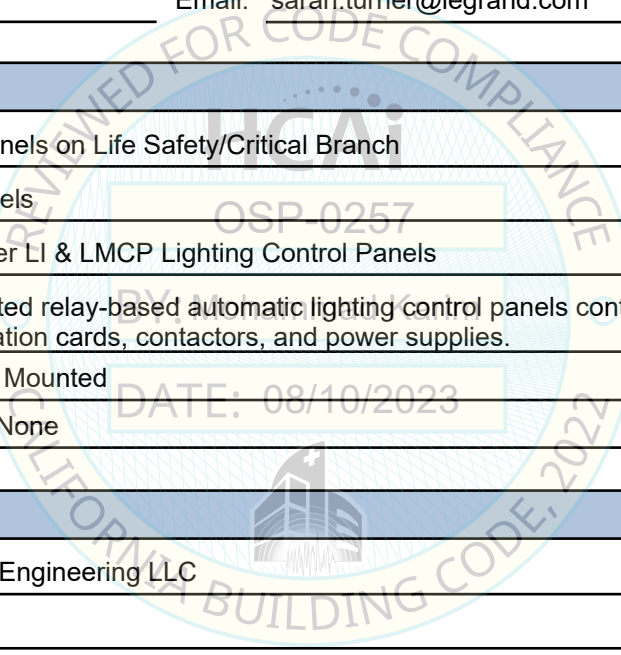
Contact Person: Derek Manwill

Mailing Address: PO Box 1194, Bend, OR 97709

Telephone: (541) 241-2102

Email: derek@manwillse.com

Title: President





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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): _____

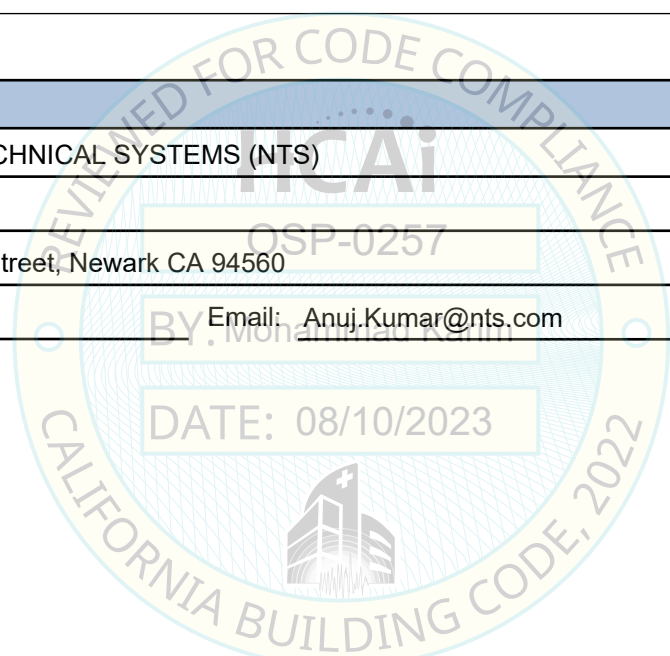
Testing Laboratory

Company Name: NATIONAL TECHNICAL SYSTEMS (NTS)

Contact Person: Anuj Kumar

Mailing Address: 38995 Cherry Street, Newark CA 94560

Telephone: (510) 578-3500 Email: Anuj.Kumar@nts.com





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Seismic Parameters

Design Basis of Equipment or Components (F_p/W_p) = 1.88

SDS (Design spectral response acceleration at short period, g) = 2.50

a_p (Amplification factor) = 2.5

R_p (Response modification factor) = 6.0

Ω_0 (System overstrength factor) = 2.0

I_p (Importance factor) = 1.5

z/h (Height ratio factor) = 1

Natural frequencies (Hz) = See Attachment

Overall dimensions and weight = See Attachment

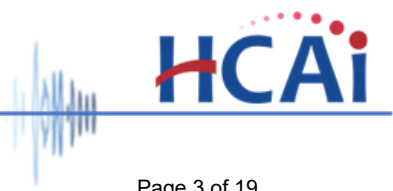
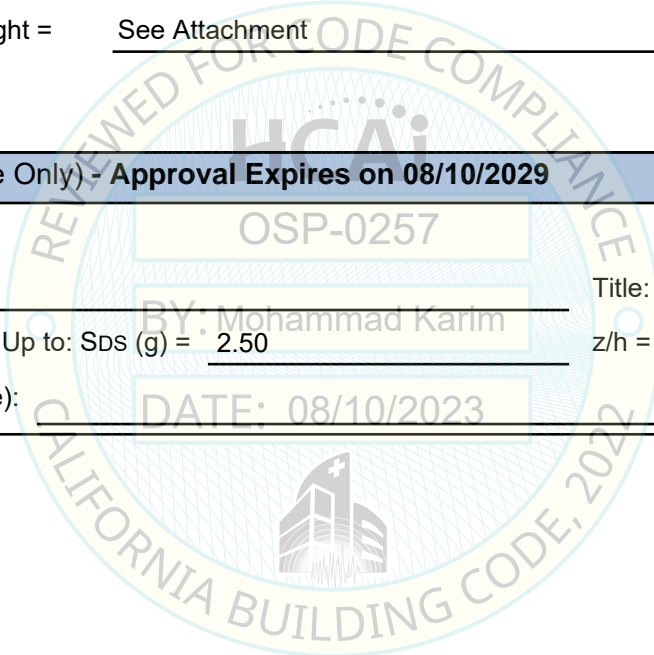
HCAI Approval (For Office Use Only) - Approval Expires on 08/10/2029

Date: 8/10/2023

Name: Mohammad Karim Title: Supervisor, Health Facilities

Special Seismic Certification Valid Up to: SDS (g) = 2.50 z/h = 1

Condition of Approval (if applicable): DATE: 08/10/2023



LEGRAND
WattStopper LI & LMCP Lighting Control Panels

TABLE 1

Model Number	Dimensions (in)			Max. Wt. (lb)	Description / Notes	Basis
	Depth	Width	Height			
WattStopper LI & LMCP Lighting Control Panels						
LMCP-8-F	5.0	17.0	16.0	26	8-relay, switching, flush mount	UUT 4
LI-8	5.0	17.0	16.0	27	8-relay	UUT 1, 7
LI-8-F	5.0	17.0	16.0	27	8-relay, flush mount	INTERP
LMCP-8	5.0	17.0	16.0	27	8-relay, switching	UUT 8
LMCP-8-10V	5.0	17.0	16.0	27	8-relay, dimming	INTERP
LMCP-8-10V-F	5.0	17.0	16.0	27	8-relay, dimming, flush mount	INTERP
LI-24	5.0	24.0	32.0	67	24-relay	UUT 2,10
LI-24-F	5.0	24.0	32.0	67	24-relay, flush mount	INTERP
LMCP-24	5.0	24.0	32.0	60	24-relay, switching	UUT 5, 11
LMCP-24-F	5.0	24.0	32.0	60	24-relay, switching, flush mount	INTERP
LMCP-24-10V	5.0	24.0	32.0	60	24-relay, dimming	INTERP
LMCP-24-10V-F	5.0	24.0	32.0	60	24-relay, dimming, flush mount	INTERP
LI-48	5.0	24.0	45.0	85	48-relay	UUT 3, 9
LI-48-F	5.0	24.0	45.0	85	48-relay, flush mount	INTERP
LMCP-48-F	5.0	24.0	45.0	89	48-relay, switching, flush mount	UUT 6
LMCP-48-10V	5.0	24.0	45.0	97	48-relay, dimming	INTERP
LMCP-48-10V-F	5.0	24.0	45.0	97	48-relay, dimming, flush mount	INTERP
LMCP-48	5.0	24.0	45.0	97	48-relay, switching	UUT 12
Mounting: Rigid wall mounted.				Seismic Levels:		$S_{DS} = 2.50g$ for $z/h = 1$ $S_{DS} = 2.50g$ for $z/h = 0$
Product Construction: NEMA 1 enclosures as listed in Table 2.						$I_p = 1.5$

Options/Subcomponents: Enclosure may contain any combination of the subcomponents listed in Table 2 so long as the maximum weights of Table 1 are not exceeded.

LEGRAND
WattStopper LI & LMCP Lighting Control Panels

TABLE 2. SUBCOMPONENTS

Model Number	Dimensions (in)			Max. Wt. (lb)	Description / Notes	Basis
	Depth	Width	Height			
Subcomponent: Enclosures - Manufacturer: Legrand						
LENC8S	4.7	16.6	15.8	18	8 relay capacity, surface mount	UUT 1,4,7,8
LENC8F	4.7	18.5	17.1	20	8 relay capacity, flush mount	INTERP
LENC8-24S	4.7	24.0	32.0	45	8 relay w/ 24 size tub, surface m.	INTERP
LENC24S	4.7	24.0	32.0	45	24 relay capacity, surface mount	2,5,10,11
LENC24F	4.7	25.9	33.4	50	24 relay capacity, flush mount	INTERP
LENC24-48S	4.7	24.0	44.5	62	24 relay capacity with 48 size tub	INTERP
LENC48S	4.7	24.0	44.5	62	48 relay capacity, surface mount	UUT 3,9,12
LENC48F	4.7	25.9	45.9	66	48 relay capacity, flush mount	UUT 6
Subcomponent: Power Supply Module - Manufacturer: Ohga Inc.						
437D535G06	-	-	-	<1	-	UUT 1-6
579B373G02	-	-	-	<1	-	UUT 1-6
Subcomponent: Power Supply Module - Manufacturer: Shanghai Legrand Electric Co.						
437D535G06	-	-	-	<1	-	UUT 7-12
579B373G02	-	-	-	<1	-	UUT 7-12
Subcomponent: Power Supply Assembly - Manufacturer: Ohga Inc.						
579B410G01	-	-	-	<1	-	UUT 1-6
Subcomponent: Power Supply Assembly Card - Manufacturer: Shanghai Legrand Electric Co.						
579B410G01	-	-	-	<1	-	UUT 7-12
Subcomponent: Power Supply (DALI PS) Assembly - Manufacturer: Ohga Inc.						
579B442G01	-	-	-	<1	-	UUT 2 & 3
Subcomponent: Power Supply (DALI PS) Assembly - Manufacturer: Shanghai Legrand Electric Co.						
579B442G01	-	-	-	<1	-	UUT 7-12
Subcomponent: Power Supply (PS) Assembly - Manufacturer: Ohga Inc.						
579B410G01	-	-	-	<1	-	UUT 3 & 6
Subcomponent: Power Supply (PS) Assembly Card - Manufacturer: Shanghai Legrand Electric Co.						
579B410G01	-	-	-	<1	-	UUT 7-12
Subcomponent: Transformer - Manufacturer: Basler						
BE31820001	-	-	-	2.2	115V/277V, 50Hz/60Hz	1,4,7-12
BE31820003	-	-	-	2.2	115V/277V, 50Hz/60Hz	2,3,5-12
Subcomponent: Transformer - Manufacturer: MCI Transformer						
2-51-0305	-	-	-	<1	28V, 50Hz/60Hz	UUT 1-12
Subcomponent: User Interface Console (LM-U) - Manufacturer: Ohga Inc.						
77-0299-132	-	-	-	<1	-	UUT 1
Subcomponent: User Interface Console (LM-U) - Manufacturer: Shanghai Legrand Electric Co.						
77-0299-132	-	-	-	<1	-	UUT 7
Subcomponent: User console interface board (LM-I) - Manufacturer: Ohga Inc.						
77-0303-102	-	-	-	<1	-	UUT 1
Subcomponent: User console interface board (LM-I) - Manufacturer: Shanghai Legrand Electric Co.						
77-0303-102	-	-	-	<1	-	UUT 7
Subcomponent: Relay Driver Board (RD) - Manufacturer: Ohga Inc.						
483C417G01	-	-	-	<1	-	UUT 1-3
483C417G01	-	-	-	<1	-	UUT 7,9,10

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

LEGRAND
WattStopper LI & LMCP Lighting Control Panels

TABLE 2. SUBCOMPONENTS (CONTINUED)

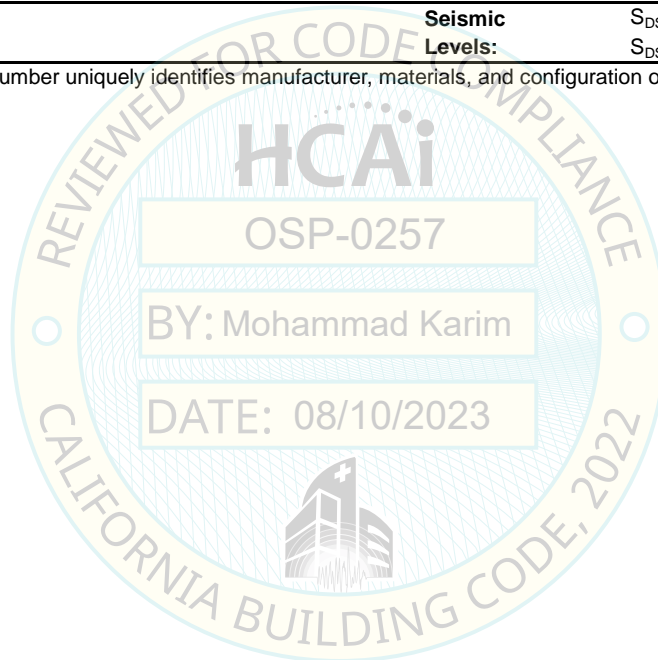
Model Number	Dimensions (in)			Max. Wt. (lb)	Description / Notes	Basis
	Depth	Width	Height			
Subcomponent: Relays - Manufacturer: Gruner						
HDR	-	-	-	<1	-	UUT 1-3
HDR-9	-	-	-	<1	-	UUT 4-6
Subcomponent: Relays - Manufacturer: Rocom						
HDR-11	-	-	-	<1	-	UUT 7-12
Subcomponent: Main Interface Board - Manufacturer: Ohga Inc.						
437D884G01	-	-	-	<1	-	UUT 1
Subcomponent: Main Interface Board - Manufacturer: Shanghai Legrand Electric Co.						
437D884G01	-	-	-	<1	-	UUT 7
Subcomponent: Group Card - Manufacturer: Ohga Inc.						
437D884G01	-	-	-	<1	-	UUT 1
Subcomponent: Group Card - Manufacturer: Shanghai Legrand Electric Co.						
437D884G01	-	-	-	<1	-	UUT 7
Subcomponent: Lighting Control - Manufacturer: Shanghai Legrand Electric Co.						
ELCU-100	-	-	-	<1	-	2,3,9,10
Subcomponent: Contactor - Manufacturer: ABB						
A16-04-00	-	-	-	<1	-	2,3,9,10
Subcomponent: Interface/Communication Card - Manufacturer: Ohga Inc.						
579B449G01	-	-	-	<1	-	UUT 2
Subcomponent: Interface/Communication Card - Manufacturer: Shanghai Legrand Electric Co.						
579B449G01	-	-	-	<1	-	UUT 10
Subcomponent: Communication Card - Manufacturer: Ohga Inc.						
579B404G01	-	-	-	<1	-	UUT 3
579B404G02	-	-	-	<1	-	UUT 3
Subcomponent: Lonworks LW/LC Communication Card - Manufacturer: Ohga Inc.						
579B404G01	-	-	-	<1	-	UUT 2 & 3
579B404G02	-	-	-	<1	-	UUT 2 & 3
579B404G03	-	-	-	<1	-	UUT 2 & 3
Subcomponent: Lonworks LW/LC Communication Card - Manufacturer: Shanghai Legrand Electric Co.						
579B404G01	-	-	-	<1	-	UUT 9 & 10
579B404G02	-	-	-	<1	-	UUT 9 & 10
579B404G03	-	-	-	<1	-	UUT 9 & 10
Subcomponent: Group Card - Manufacturer: Ohga Inc.						
437D884G01	-	-	-	<1	-	UUT 2
Subcomponent: Group Card - Manufacturer: Shanghai Legrand Electric Co.						
437D884G01	-	-	-	<1	-	UUT 10
Subcomponent: Programming Module - Manufacturer: WattStopper						
HCLK8SS	-	-	-	<1	-	UUT 2 & 10

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

LEGRAND
WattStopper LI & LMCP Lighting Control Panels

TABLE 2. SUBCOMPONENTS (CONTINUED)

Model Number	Dimensions (in)			Max. Wt. (lb)	Description / Notes	Basis
	Depth	Width	Height			
Subcomponent: Circuit Board - Manufacturer: Shanghai Legrand Electric Co.						
16615	-	-	-	<1	LMPI	4-6,8,11-12
29851-02	-	-	-	<1	LMRD-8-10V	INTERP
16916	-	-	-	<1	LMRD-8	UUT 4 & 8
29851-01	-	-	-	<1	LMRD-12-10V	INTERP
16694	-	-	-	<1	LMRD-12	5,6,11,12
Mounting: Mounted within unit.				Seismic Levels:	$S_{DS} = 2.50g$ 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.						



ATTACHMENT 2: UNIT UNDER TEST SUMMARIES

SPECIAL SEISMIC CERTIFICATION

TEST UNITS						
UUT	Model Number	Test Report	Report Date	Test Laboratory	Test Date	
UUT 1	LI-8	R86371	2-8-12	NTS-Newark	1-23-12	
UUT 2	LI-24	R86371	2-8-12	NTS-Newark	1-23-12	
UUT 3	LI-48	R86371	2-8-12	NTS-Newark	1-23-12	
UUT 4	LMCP-8-F	R94679	2-27-14	NTS-Newark	2-13-14	
UUT 5	LMCP-24	R94679	2-27-14	NTS-Newark	2-13-14	
UUT 6	LMCP-48-F	R94679	2-27-14	NTS-Newark	2-13-14	
UUT 7	LI-8	PR052797.01 Rev 1	1-10-17	NTS-Newark	11-16-16	
UUT 8	LMCP-8-F	PR052797.01 Rev 1	1-10-17	NTS-Newark	11-16-16	
UUT 9	LI-48	PR052797.01 Rev 1	1-10-17	NTS-Newark	11-16-16	
UUT 10	LI-24	PR052797.01 Rev 1	1-10-17	NTS-Newark	11-17-16	
UUT 11	LMPC-24	PR052797.01 Rev 1	1-10-17	NTS-Newark	11-17-16	
UUT 12	LMPC-48	PR052797.01 Rev 1	1-10-17	NTS-Newark	11-17-16	

UUT 1

OSP-0257

Manufacturer: LEGRAND
 Model number: LI-8
 Unit function: LIGHTING CONTROL PANELS
 Serial number: N/A

Dimensions (in)			Weight	Res. Freq. (Hz)		
Depth	Width	Height	(lb)	F-B	S-S	V
5.0	17.0	16.0	27	N/A	N/A	N/A

Code & criteria: 2022 CBC, ICC-ES AC156
 Test laboratory: NTS-Newark
 Report: R86371 (dated 2-8-12), tested on 1-23-12

S _{DS} (g)	z/h	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
2.50	1	4.00	3.00	1.68	0.68
2.50	0				


Importance Factor, I_p = 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: Unit was rigid wall mounted to fixture using (4) 3/8" lag bolts. The fixture was rigid mounted to table.

Construction: 16 ga carbon steel NEMA-1 enclosures with 14 ga carbon steel covers.

Subcomponents: Legrand - Enclosures (LENC8S), Ohga Inc. - Power Supply Module (437D535G06), Ohga Inc. - Power Supply Module (579B373G02), Ohga Inc. - Power Supply Assembly (579B410G01), Basler - Transformer (BE31820001), MCI Transformer - Transformer (2-51-0305), Ohga Inc. - User Interface Console (LM-U) (77-0299-132), Ohga Inc. - User console interface board (LM-I) (77-0303-102), Ohga Inc. - Relay Driver Board (RD) (483C417G01), Gruner - Relays (HDR), Ohga Inc. - Main Interface Board (437D884G01), Ohga Inc. - Group Card (437D884G01)

Testing notes: UUT 1 is called NTS-ENV-1 in the test report. Testing was performed on a uniaxial table in all 4 directions (X, Y, Z, and 45-deg to X & Y).



UUT 2

Manufacturer: LEGRAND

Model number: LI-24

Unit function: LIGHTING CONTROL PANELS

Serial number: N/A

Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
5.0	24.0	32.0	67	N/A	N/A	N/A

Code & criteria: 2022 CBC, ICC-ES AC156

Test laboratory: NTS-Newark

Report: R86371 (dated 2-8-12), tested on 1-23-12

S _{DS} (g)	z/h	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
2.50	1	4.00	3.00	1.68	0.68
2.50	0				

Importance Factor, I_p = 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: Unit was rigid wall mounted to fixture using (4) 3/8" lag bolts. The fixture was rigid mounted to table.

Construction: 16 ga carbon steel NEMA-1 enclosures with 14 ga carbon steel covers.

Subcomponents: Legrand - Enclosures (LENC24S), Ohga Inc. - Power Supply Module (437D535G06), Ohga Inc. - Power Supply Module (579B373G02), Ohga Inc. - Power Supply Assembly (579B410G01), Ohga Inc. - Power Supply (DALI PS) Assembly (579B442G01), Basler - Transformer (BE31820003), MCI Transformer - Transformer (2-51-0305), Ohga Inc. - Relay Driver Board (RD) (483C417G01), Gruner - Relays (HDR), Shanghai Legrand Electric Co. - Lighting Control (ELCU-100), ABB - Contactor (A16-04-00), Ohga Inc. - Interface/Communication Card (579B449G01), Ohga Inc. - Lonworks LW/LC Communication Card (579B404G01), Ohga Inc. - Lonworks LW/LC Communication Card (579B404G02), Ohga Inc. - Lonworks LW/LC Communication Card (579B404G03), Ohga Inc. - Group Card (437D884G01), WattStopper - Programming Module (HCLK8SS)

Testing notes: UUT 2 is called NTS-ENV-2 in the test report. Testing was performed on a uniaxial table in all 4 directions (X, Y, Z, and 45-deg to X & Y).



UUT 3

Manufacturer: LEGRAND
 Model number: LI-48
 Unit function: LIGHTING CONTROL PANELS
 Serial number: N/A

Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
5.0	24.0	45.0	85	N/A	N/A	N/A

Code & criteria: 2022 CBC, ICC-ES AC156

Test laboratory: NTS-Newark

Report: R86371 (dated 2-8-12), tested on 1-23-12

S _{DS} (g)	z/h	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
2.50	1	4.00	3.00	1.68	0.68
2.50	0				

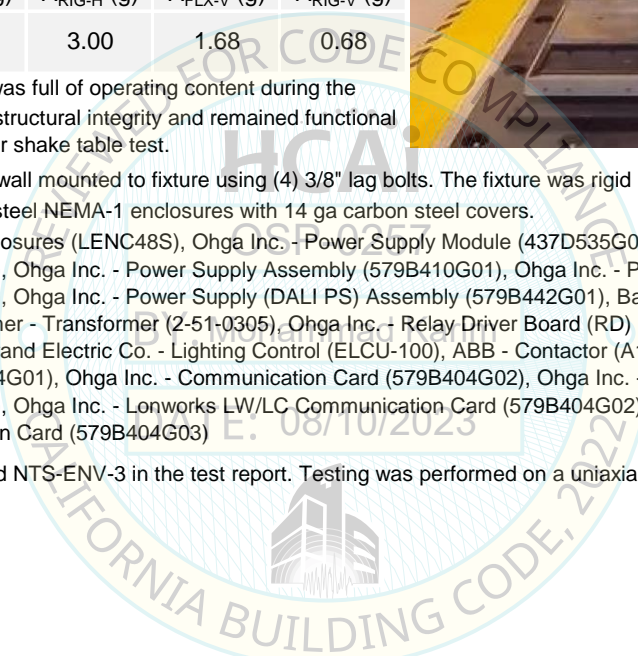
Importance Factor, I_p = 1.5: Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

Mounting: Unit was rigid wall mounted to fixture using (4) 3/8" lag bolts. The fixture was rigid mounted to table.

Construction: 16 ga carbon steel NEMA-1 enclosures with 14 ga carbon steel covers.

Subcomponents: Legrand - Enclosures (LENC48S), Ohga Inc. - Power Supply Module (437D535G06), Ohga Inc. - Power Supply Module (579B373G02), Ohga Inc. - Power Supply Assembly (579B410G01), Ohga Inc. - Power Supply (DALI PS) Assembly (579B442G01), Ohga Inc. - Power Supply (DALI PS) Assembly (579B442G01), Basler - Transformer (BE31820003) MCI Transformer - Transformer (2-51-0305), Ohga Inc. - Relay Driver Board (RD) (483C417G01), Gruner - Relays (HDR), Shanghai Legrand Electric Co. - Lighting Control (ELCU-100), ABB - Contactor (A16-04-00), Ohga Inc. - Communication Card (579B404G01), Ohga Inc. - Communication Card (579B404G02), Ohga Inc. - Lonworks LW/LC Communication Card (579B404G01), Ohga Inc. - Lonworks LW/LC Communication Card (579B404G02), Ohga Inc. - Lonworks LW/LC Communication Card (579B404G03)

Testing notes: UUT 3 is called NTS-ENV-3 in the test report. Testing was performed on a uniaxial table in all 4 directions (X, Y, Z, and 45-deg to X & Y).



UUT 4

Manufacturer: LEGRAND
 Model number: LMCP-8-F
 Unit function: LIGHTING CONTROL PANELS
 Serial number: N/A



Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
5.0	17.0	16.0	26	N/A	N/A	N/A

Code & criteria: 2022 CBC, ICC-ES AC156

Test laboratory: NTS-Newark

Report: R94679 (dated 2-27-14), tested on 2-13-14

S _{DS} (g)	z/h	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
2.50	1	4.00	3.00	1.68	0.68
2.50	0				

Importance Factor, I_p = 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.

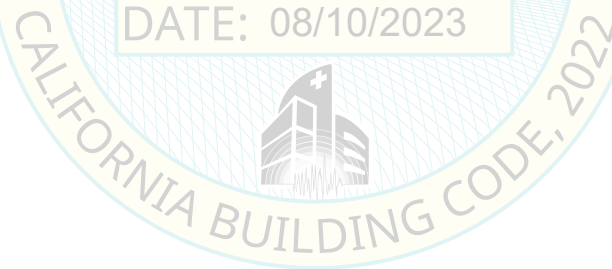
Mounting: Unit was rigid wall mounted to fixture using (4) 3/8" lag bolts. The fixture was rigid mounted to table.

Construction: 16 ga carbon steel NEMA-1 enclosures with 14 ga carbon steel covers.

Subcomponents: Legrand - Enclosures (LENC8S), Ohga Inc. - Power Supply Module (437D535G06), Ohga Inc. - Power Supply Module (579B373G02), Ohga Inc. - Power Supply Assembly (579B410G01), Basler - Transformer (BE31820001), MCI Transformer - Transformer (2-51-0305), Gruner - Relays (HDR-9), Shanghai Legrand Electric Co. - Circuit Board (16615), Shanghai Legrand Electric Co. - Circuit Board (16916)

Testing notes: UUT 4 is called LMCP-8-F in the test report. Testing was performed on a uniaxial table in all 4 directions (X, Y, Z, and 45-deg to X & Y).

DATE: 08/10/2023



UUT 5

Manufacturer: LEGRAND
 Model number: LMCP-24
 Unit function: LIGHTING CONTROL PANELS
 Serial number: N/A



Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
5.0	24.0	32.0	60	N/A	N/A	N/A

Code & criteria: 2022 CBC, ICC-ES AC156

Test laboratory: NTS-Newark

Report: R94679 (dated 2-27-14), tested on 2-13-14

S _{DS} (g)	z/h	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
2.50	1	4.00	3.00	1.68	0.68
2.50	0				

Importance Factor, I_p = 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.

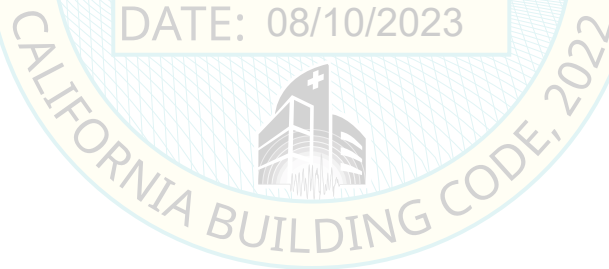
Mounting: Unit was rigid wall mounted to fixture using (4) 3/8" lag bolts. The fixture was rigid mounted to table.

Construction: 16 ga carbon steel NEMA-1 enclosures with 14 ga carbon steel covers.

Subcomponents: Legrand - Enclosures (LENC24S), Ohga Inc. - Power Supply Module (437D535G06), Ohga Inc. - Power Supply Module (579B373G02), Ohga Inc. - Power Supply Assembly (579B410G01), Basler - Transformer (BE31820003), MCI Transformer - Transformer (2-51-0305), Gruner - Relays (HDR-9), Shanghai Legrand Electric Co. - Circuit Board (16615), Shanghai Legrand Electric Co. - Circuit Board (16694)

Testing notes: UUT 5 is called LMCP-24-S in the test report. Testing was performed on a uniaxial table in all 4 directions (X, Y, Z, and 45-deg to X & Y).

DATE: 08/10/2023



UUT 6

Manufacturer: LEGRAND
 Model number: LMCP-48-F
 Unit function: LIGHTING CONTROL PANELS
 Serial number: N/A



Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
5.0	24.0	45.0	89	N/A	N/A	N/A

Code & criteria: 2022 CBC, ICC-ES AC156

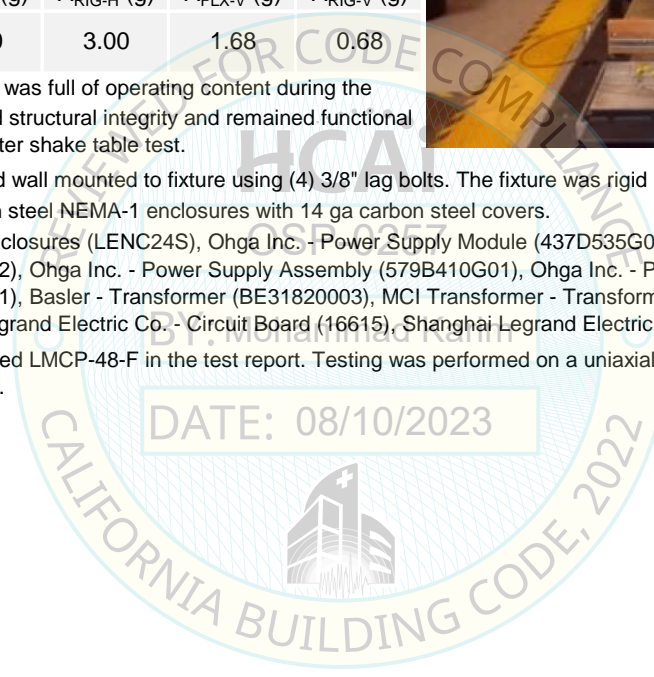
Test laboratory: NTS-Newark

Report: R94679 (dated 2-27-14), tested on 2-13-14

S _{DS} (g)	z/h	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
2.50	1	4.00	3.00	1.68	0.68
2.50	0				

Importance Factor, I_p = 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: Unit was rigid wall mounted to fixture using (4) 3/8" lag bolts. The fixture was rigid mounted to table.
- Construction: 16 ga carbon steel NEMA-1 enclosures with 14 ga carbon steel covers.
- Subcomponents: Legrand - Enclosures (LENC24S), Ohga Inc. - Power Supply Module (437D535G06), Ohga Inc. - Power Supply Module (579B373G02), Ohga Inc. - Power Supply Assembly (579B410G01), Ohga Inc. - Power Supply (DALI PS) Assembly (579B442G01), Basler - Transformer (BE31820003), MCI Transformer - Transformer (2-51-0305), Gruner - Relays (HDR-9), Shanghai Legrand Electric Co. - Circuit Board (16615), Shanghai Legrand Electric Co. - Circuit Board (16694)
- Testing notes: UUT 6 is called LMCP-48-F in the test report. Testing was performed on a uniaxial table in all 4 directions (X, Y, Z, and 45-deg to X & Y).



UUT 7

Manufacturer: LEGRAND

Model number: LI-8

Unit function: LIGHTING CONTROL PANELS

Serial number: N/A

Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
5.0	17.0	16.0	25	N/A	N/A	N/A

Code & criteria: 2022 CBC, ICC-ES AC156

Test laboratory: NTS-Newark

Report: PR052797.01 Rev 1 (dated 1-10-17), tested on 11-16-16

S _{DS} (g)	z/h	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
2.50	1	4.00	3.00	1.68	0.68
2.50	0				

Importance Factor, I_p = 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: Unit was rigid wall mounted to fixture using (4) 3/8" lag bolts. The fixture was rigid mounted to table.

Construction: 16 ga carbon steel NEMA-1 enclosures with 14 ga carbon steel covers.

Subcomponents: Legrand - Enclosures (LENC8S), Shanghai Legrand Electric Co. - Power Supply Module (437D535G06), Shanghai Legrand Electric Co. - Power Supply Module (579B373G02), Shanghai Legrand Electric Co. - Power Supply Assembly Card (579B410G01), Shanghai Legrand Electric Co. - Power Supply (DALI PS) Assembly (579B410G01), Shanghai Legrand Electric Co. - Power Supply (PS) Assembly Card (579B410G01), Basler - Transformer (BE31820001), Basler - Transformer (BE31820003), MCI Transformer - Transformer (2-51-0305), Shanghai Legrand Electric Co. - User Interface Console (LM-U) (77-0299-132), Shanghai Legrand Electric Co. - User console interface board (LM-I) (77-0303-102), Ohga Inc. - Relay Driver Board (RD) (483C417G01), Rocom - Relays (HDR-11), Shanghai Legrand Electric Co. - Main Interface Board (437D884G01), Shanghai Legrand Electric Co. - Group Card (437D884G01)

Testing notes: UUT 7 is called EUT-1 in the test report. Testing was performed on a uniaxial table in all 4 directions (X, Y, Z, and 45-deg to X & Y).



UUT 8

Manufacturer: LEGRAND
 Model number: LMCP-8-F
 Unit function: LIGHTING CONTROL PANELS
 Serial number: N/A



Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
5.0	17.0	16.0	27	N/A	N/A	N/A

Code & criteria: 2022 CBC, ICC-ES AC156

Test laboratory: NTS-Newark

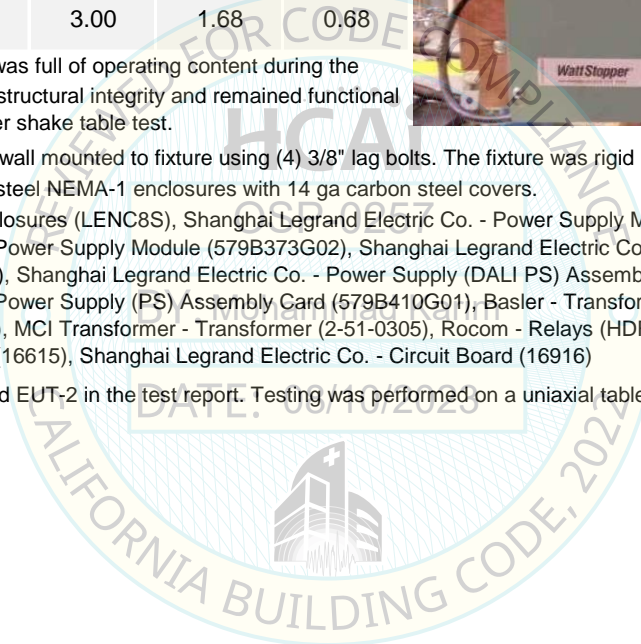
Report: PR052797.01 Rev 1 (dated 1-10-17), tested on 11-16-16

S _{DS} (g)	z/h	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
2.50	1	4.00	3.00	1.68	0.68
2.50	0				

Importance Factor, I_P = 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: Unit was rigid wall mounted to fixture using (4) 3/8" lag bolts. The fixture was rigid mounted to table.
- Construction: 16 ga carbon steel NEMA-1 enclosures with 14 ga carbon steel covers.
- Subcomponents: Legrand - Enclosures (LENC8S), Shanghai Legrand Electric Co. - Power Supply Module (437D535G06), Shanghai Legrand Electric Co. - Power Supply Module (579B373G02), Shanghai Legrand Electric Co. - Power Supply Assembly Card (579B410G01), Shanghai Legrand Electric Co. - Power Supply (DALI PS) Assembly (579B410G01), Shanghai Legrand Electric Co. - Power Supply (PS) Assembly Card (579B410G01), Basler - Transformer (BE31820001), Basler - Transformer (BE31820003), MCI Transformer - Transformer (2-51-0305), Rocom - Relays (HDR-11), Shanghai Legrand Electric Co. - Circuit Board (16615), Shanghai Legrand Electric Co. - Circuit Board (16916)

Testing notes: UUT 8 is called EUT-2 in the test report. Testing was performed on a uniaxial table in all 4 directions (X, Y, Z, and 45-deg to X & Y).



UUT 9

Manufacturer: LEGRAND

Model number: LI-48

Unit function: LIGHTING CONTROL PANELS

Serial number: N/A

Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
5.0	24.0	45.0	72	N/A	N/A	N/A

Code & criteria: 2022 CBC, ICC-ES AC156

Test laboratory: NTS-Newark

Report: PR052797.01 Rev 1 (dated 1-10-17), tested on 11-16-16

S _{DS} (g)	z/h	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
2.50	1	4.00	3.00	1.68	0.68
2.50	0				

Importance Factor, I_p = 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: Unit was rigid wall mounted to fixture using (4) 3/8" Grade 5 bolts. Fixture was rigid mounted to table.

Construction: 16 ga carbon steel NEMA-1 enclosures with 14 ga carbon steel covers.

Subcomponents: Legrand - Enclosures (LENC48S), Shanghai Legrand Electric Co. - Power Supply Module (437D535G06), Shanghai Legrand Electric Co. - Power Supply Module (579B373G02), Shanghai Legrand Electric Co. - Power Supply Assembly Card (579B410G01), Shanghai Legrand Electric Co. - Power Supply (DALI PS) Assembly (579B410G01), Shanghai Legrand Electric Co. - Power Supply (PS) Assembly Card (579B410G01), Basler - Transformer (BE31820001), Basler - Transformer (BE31820003), MCI Transformer - Transformer (2-51-0305), Ohga Inc. - Relay Driver Board (RD) (483C417G01), Rocom - Relays (HDR-11), Shanghai Legrand Electric Co. - Lighting Control (ELCU-100), ABB - Contactor (A16-04-00), Shanghai Legrand Electric Co. - Lonworks LW/LC Communication Card (579B404G01), Shanghai Legrand Electric Co. - Lonworks LW/LC Communication Card (579B404G02), Shanghai Legrand Electric Co. - Lonworks LW/LC Communication Card (579B404G03)

Testing notes: UUT 9 is called EUT-3 in the test report. Testing was performed on a uniaxial table in all 4 directions (X, Y, Z, and 45-deg to X & Y).



UUT 10

Manufacturer: LEGRAND

Model number: LI-24

Unit function: LIGHTING CONTROL PANELS

Serial number: N/A

Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
5.0	24.0	32.0	49	N/A	N/A	N/A

Code & criteria: 2022 CBC, ICC-ES AC156

Test laboratory: NTS-Newark

Report: PR052797.01 Rev 1 (dated 1-10-17), tested on 11-17-16

S _{DS} (g)	z/h	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
2.50	1	4.00	3.00	1.68	0.68
2.50	0				

Importance Factor, I_p = 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: Unit was rigid wall mounted to fixture using (4) 3/8" lag bolts. The fixture was rigid mounted to table.

Construction: 16 ga carbon steel NEMA-1 enclosures with 14 ga carbon steel covers.

Subcomponents: Legrand - Enclosures (LENC24S), Shanghai Legrand Electric Co. - Power Supply Module (437D535G06), Shanghai Legrand Electric Co. - Power Supply Module (579B373G02), Shanghai Legrand Electric Co. - Power Supply Assembly Card (579B410G01), Shanghai Legrand Electric Co. - Power Supply (DALI PS) Assembly (579B410G01), Shanghai Legrand Electric Co. - Power Supply (PS) Assembly Card (579B410G01), Basler - Transformer (BE31820001), Basler - Transformer (BE31820003), MCI Transformer - Transformer (2-51-0305), Ohga Inc. - Relay Driver Board (RD) (483C417G01), Rocom - Relays (HDR-11), Shanghai Legrand Electric Co. - Lighting Control (ELCU-100), ABB - Contactor (A16-04-00), Shanghai Legrand Electric Co. - Interface/Communication Card (579B449G01), Shanghai Legrand Electric Co. - Lonworks LW/LC Communication Card (579B404G01), Shanghai Legrand Electric Co. - Lonworks LW/LC Communication Card (579B404G02), Shanghai Legrand Electric Co. - Lonworks LW/LC Communication Card (579B404G03), Shanghai Legrand Electric Co. - Group Card (437D884G01), WattStopper - Programming Module (HCLK8SS)

Testing notes: UUT 10 is called EUT-4 in the test report. Testing was performed on a uniaxial table in all 4 directions (X, Y, Z, and 45-deg to X & Y).



UUT 11

Manufacturer: LEGRAND
 Model number: LMPC-24
 Unit function: LIGHTING CONTROL PANELS
 Serial number: N/A

Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
5.0	24.0	32.0	50	N/A	N/A	N/A

Code & criteria: 2022 CBC, ICC-ES AC156

Test laboratory: NTS-Newark

Report: PR052797.01 Rev 1 (dated 1-10-17), tested on 11-17-16

S _{DS} (g)	z/h	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
2.50	1	4.00	3.00	1.68	0.68
2.50	0				

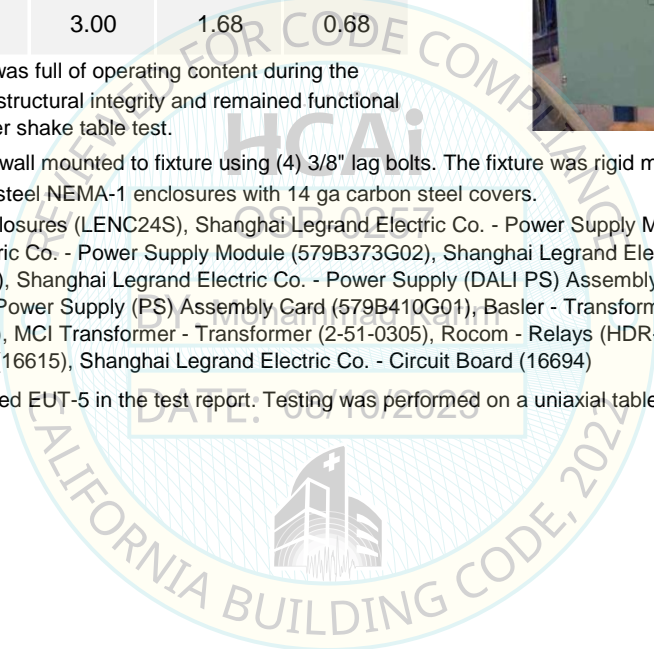
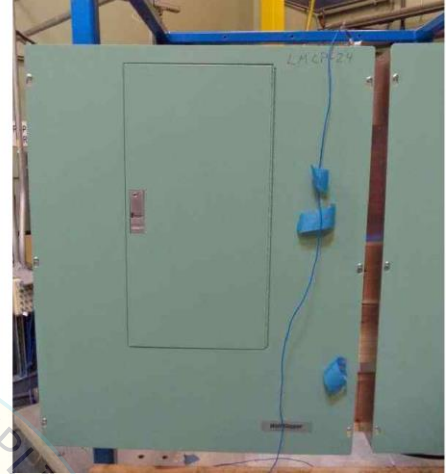
Importance Factor, I_p = 1.5: Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

Mounting: Unit was rigid wall mounted to fixture using (4) 3/8" lag bolts. The fixture was rigid mounted to table.

Construction: 16 ga carbon steel NEMA-1 enclosures with 14 ga carbon steel covers.

Subcomponents: Legrand - Enclosures (LENC24S), Shanghai Legrand Electric Co. - Power Supply Module (437D535G06), Shanghai Legrand Electric Co. - Power Supply Module (579B373G02), Shanghai Legrand Electric Co. - Power Supply Assembly Card (579B410G01), Shanghai Legrand Electric Co. - Power Supply (DALI PS) Assembly (579B410G01), Shanghai Legrand Electric Co. - Power Supply (PS) Assembly Card (579B410G01), Basler - Transformer (BE31820001), Basler - Transformer (BE31820003), MCI Transformer - Transformer (2-51-0305), Rocom - Relays (HDR-11), Shanghai Legrand Electric Co. - Circuit Board (16615), Shanghai Legrand Electric Co. - Circuit Board (16694)

Testing notes: UUT 11 is called EUT-5 in the test report. Testing was performed on a uniaxial table in all 4 directions (X, Y, Z, and 45-deg to X & Y).



UUT 12

Manufacturer: LEGRAND
 Model number: LMPC-48
 Unit function: LIGHTING CONTROL PANELS
 Serial number: N/A



Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
5.0	24.0	45.0	97	N/A	N/A	N/A

Code & criteria: 2022 CBC, ICC-ES AC156

Test laboratory: NTS-Newark

Report: PR052797.01 Rev 1 (dated 1-10-17), tested on 11-17-16

S _{DS} (g)	z/h	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
2.50	1	4.00	3.00	1.68	0.68
2.50	0				

Importance Factor, I_p = 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: Unit was rigid wall mounted to fixture using (4) 3/8" Grade 5 bolts. Fixture was rigid mounted to table.

Construction: 16 ga carbon steel NEMA-1 enclosures with 14 ga carbon steel covers.

Subcomponents: Legrand - Enclosures (LENC48S), Shanghai Legrand Electric Co. - Power Supply Module (437D535G06), Shanghai Legrand Electric Co. - Power Supply Module (579B373G02), Shanghai Legrand Electric Co. - Power Supply Assembly Card (579B410G01), Shanghai Legrand Electric Co. - Power Supply (DALI PS) Assembly (579B410G01), Shanghai Legrand Electric Co. - Power Supply (PS) Assembly Card (579B410G01), Basler - Transformer (BE31820001), Basler - Transformer (BE31820003), MCI Transformer - Transformer (2-51-0305), Rocom - Relays (HDR-11), Shanghai Legrand Electric Co. - Circuit Board (16615), Shanghai Legrand Electric Co. - Circuit Board (16694)

Testing notes: UUT 12 is called EUT-6 in the test report. Testing was performed on a uniaxial table in all 4 directions (X, Y, Z, and 45-deg to X & Y).

