

DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION FACILITIES DEVELOPMENT DIVISION

APPLICATION FOR HCAI SPECIAL SEISMIC	OFFICE USE ONLY
CERTIFICATION PREAPPROVAL (OSP)	APPLICATION #: OSP-0257
HCAI Special Seismic Certification Preapproval (OSP)	
Type: New X 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@le	grand.com
Product Information	MP
Product Name: Electrical Control Panels on Life Safety/Critical Branch	
Product Type: Lighting Control Panels	2
Product Model Number: WattStopper LI & LMCP Lighting Control Panels	
General Description: Wall-mounted relay-based automatic lighting contro communication cards, contactors, and power supp	
Mounting Description: Rigid, Wall Mounted	
Tested Seismic Enhancements: None	
Applicant Information	O ^K
Applicant Company Name: Manwill Engineering LLC	0
Contact Person: Derek Manwill	
Mailing Address: PO Box 1194, Bend, OR 97709	
Telephone: (541) 241-2102 Email: derek@manwills	se.com
Title: President	



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OSP-0257



DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION FACILITIES DEVELOPMENT DIVISION

California Licensed Structural Engineer	Responsible for the Engineering and Test Report(s)
Company Name: MANWILL ENGINEERING LL	с
Name: Derek Manwill	California License Number: S6266
Mailing Address: PO Box 1194, Bend, OR 9770	9
Telephone: (541) 241-2102	_ Email: derek@manwillse.com
Certification Method	
GR-63-Core X ICC-ES AC15	6 IEEE 344 IEEE 693 NEBS 3
Other (Please Specify):	
	FORCODECO
Testing Laboratory	JAN MA
Company Name: NATIONAL TECHNICAL SYS	TEMS (NTS)
Contact Person: Anuj Kumar	2000.0057
Mailing Address: 38995 Cherry Street, Newark	CA 94560
Telephone: (510) 578-3500	Email: Anuj.Kumar@nts.com
	DATE: 08/10/2023
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Seismic Parameters			
Design Basis of Equipment or Component	s (Fp/Wp) = 1.88		
SDS (Design spectral response acce	eleration at short period, g) = 2.50		
ap (Amplification factor) =	2.5		
R _P (Response modification factor) =	6.0		
Ω_0 (System overstrength factor) =	2.0		
lp (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	- The second sec	
Date: 8/10/2023	OSP-0257	1 G	
Name: Mohammad Karim		Title:	Supervisor, Health Facilities
Special Seismic Certification Valid Up to: S	Sos (g) = 2.50	 z/h =	1
Condition of Approval (if applicable):	DATE: 08/10/2023		
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ATTACHMENT 1: CERTIFIED COMPONENTS

SPECIAL SEISMIC CERTIFICATION

LEGRAND WattStopper LI & LMCP Lighting Control Panels

			TABLE 1			
Model Number	[Dimensions (i	n)	Max. Wt.	Description / Notes	Basis
Model Number	Depth	Width	Height	(lb)	Description / Notes	Dasis
WattStopper LI & LMCP Lighting Co	ntrol Panels	5				
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 E	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	5P45.025	85	4 <mark>8-relay</mark>	UUT 3, 9
LI-48-F	5.0	24.0	45.0	85	48 <mark>-relay,</mark> flush mount	INTERP
LMCP-48-F	5.0	24.0	45.0	89	48 <mark>-relay,</mark> switching, flush mount	UUT 6
LMCP-48-10V	5.0	BY 24.00h	am45.0ad	Kar	48- <mark>relay,</mark> dimming	INTERP
LMCP-48-10V-F	5.0	24.0	45.0	97	48- <mark>relay,</mark> dimming, flush mount	INTERP
LMCP-48	5.0	24.0	45.0	97	48 <mark>-relay,</mark> switching	UUT 12
Mounting: Rigid wall mounted.	S		08/10/2	Seismic Levels:	$S_{DS} = 2.50g$ for z/h = 1 $S_{DS} = 2.50g$ for z/h = 0	I _P = 1.5

Product Construction: NEMA 1 enclosures as listed in Table 2.

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.





ATTACHMENT 1: CERTIFIED SUBCOMPONENTS

SPECIAL SEISMIC CERTIFICATION

LEGRAND WattStopper LI & LMCP Lighting Control Panels

		TABLE 2.	SUBCOM	PONENTS		
Model Number		mensions (ii		Max. Wt.	Description / Notes	Basis
	Depth	Width	Height	(lb)		Buolo
Subcomponent: Enclosures - Manufa	acturer: Legra	and				
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	24.0R	44.5 E	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 Modu	le - Manufact	urer: Ohga lı	nc.	AN AN		
437D535G06	2			<1	-	UUT 1-6
579B373G02	KI	WWW¥ 🕅 V		<1	Y.	UUT 1-6
Subcomponent: Power Supply Modu	le - Manufact	urer: Shangh	nai Legrand	$(\pi \Lambda \Lambda \Lambda \nabla \nabla Y X X X X X)$	2	
437D535G06	41	0.5	SP-025	57 <1		UUT 7-12
579B373G02	Q ////L			<1	m	UUT 7-12
Subcomponent: Power Supply Asser	nbly - Manufa	acturer: Oba	alnc			001112
579B410G01	B		ammad	Karim		UUT 1-6
Subcomponent: Power Supply Asser	nbly Card - M				ic Co	00110
579B410G01	nory card - M	lanulacturer.	Shanghari			UUT 7-12
Subcomponent: Power Supply (DALI	PS) Accomb		08/10/2	2023		0017-12
	F3) Assemb	iy - Manulaci	uren. Onga			UUT 2 & 3
579B442G01		hi Manufaci	- Chan	<1		001283
Subcomponent: Power Supply (DALI	PS) Assemb	iy - Manufact	urer: Shang	NAKNAKN	Electric Co.	
579B442G01		NNN KNY		<1		UUT 7-12
Subcomponent: Power Supply (PS) A	Assembly - M	anufacturer:	Unga Inc.			
579B410G01				<10	-	UUT 3 & 6
Subcomponent: Power Supply (PS) A	Assembly Car	d - Manufact	urer: Shang		Electric Co.	
579B410G01			ILUN	<1	-	UUT 7-12
Subcomponent: Transformer - Manut	facturer: Bas	ler				
BE31820001	-	-	-	2.2	115V/277V, 50Hz/60Hz	1,4,7-12
BE31820003	-	-	-	2.2	115V/277V, 50Hz/60Hz	2,3,5-12
Subcomponent: Transformer - Manuf	facturer: MCI	Transformer	•			
2-51-0305	-	-	-	<1	28V, 50Hz/60Hz	UUT 1-12
Subcomponent: User Inferface Conse	ole (LM-U) - N	lanufacturer	: Ohga Inc.			
77-0299-132	-	-	-	<1	-	UUT 1
Subcomponent: User Inferface Conse	ole (LM-U) - N	lanufacturer	: Shanghai	Legrand Elect	ric Co.	
77-0299-132	-	-	-	<1	-	UUT 7
Subcomponent: User console interfa	ce board (LM	I-I) - Manufac	turer: Ohga	Inc.		
77-0303-102	-	-	-	<1	-	UUT 1
Subcomponent: User console interfa	ce board (LM	I-I) - Manufac	turer: Shan	ghai Legrand	Electric Co.	
77-0303-102	-	-	-	<1	-	UUT 7
Subcomponent: Relay Driver Board (RD) - Manufa	cturer: 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.





ATTACHMENT 1: CERTIFIED SUBCOMPONENTS

SPECIAL SEISMIC CERTIFICATION

LEGRAND WattStopper LI & LMCP Lighting Control Panels

	TABLE 2. SUBCOMPON	ENTS (CONT	NUED)	
Model Number	Dimensions (in) Depth Width Heigh	Max. Wt. nt (lb)	Description / Notes	Basis
Subcomponent: Relays - Manufact	urer: Gruner			
HDR		<1	-	UUT 1-3
HDR-9		<1	-	UUT 4-6
Subcomponent: Relays - Manufact	urer: Rocom			
HDR-11		<1	-	UUT 7-12
Subcomponent: Main Interface Bo	ard - Manufacturer: Ohga Inc.			
437D884G01		<1	-	UUT 1
Subcomponent: Main Interface Bo	ard - Manufacturer: Shanghai Legrar	nd Electric Co.		
437D884G01			-	UUT 7
Subcomponent: Group Card - Man	ufacturer: Ohga Inc.			
437D884G01		<1		UUT 1
Subcomponent: Group Card - Man	ufacturer: Shanghai Legrand Electric	c Co.	Z	
437D884G01		<1	2	UUT 7
Subcomponent: Lighting Control -	Manufacturer: Shanghai Legrand El	lectric Co.	G	
ELCU-100		<1	- Fri	2,3,9,10
Subcomponent: Contactor - Manut				
A16-04-00	O BY: Mohamma	ad Karim 👔		2,3,9,10
Subcomponent: Interface/Commu	nication Card - Manufacturer: Ohga I	nc.		
579B449G01		<1		UUT 2
Subcomponent: Interface/Commun	nication Card - Manufacturer: Shang	hai Legrand Elec	tric Co.	
579B449G01		<1		UUT 10
Subcomponent: Communication C	Card - Manufacturer: Ohga Inc.		2	
579B404G01		<1		UUT 3
579B404G02		<1		UUT 3
Subcomponent: Lonworks LW/LC	Communication Card - Manufacture	r: Ohga Inc.		
579B404G01	- A RITI DI	NG T	-	UUT 2 & 3
579B404G02	DOILDI	<1	-	UUT 2 & 3
579B404G03		<1	-	UUT 2 & 3
Subcomponent: Lonworks LW/LC	Communication Card - Manufacture	r: Shanghai Legr	and Electric Co.	
579B404G01		<1	-	UUT 9 & 10
579B404G02		<1	-	UUT 9 & 10
579B404G03		<1	-	UUT 9 & 10
Subcomponent: Group Card - Man	ufacturer: Ohga Inc.			
437D884G01		<1	-	UUT 2
Subcomponent: Group Card - Man	ufacturer: Shanghai Legrand Electri	c Co.		
437D884G01		<1	-	UUT 10
Subcomponent: Programming Mo	dule - 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.





ATTACHMENT 1: CERTIFIED SUBCOMPONENTS

SPECIAL SEISMIC CERTIFICATION

LEGRAND WattStopper LI & LMCP Lighting Control Panels

TABLE 2. SUBCOMPONENTS (CONTINUED)

Model Number	Di	imensions (ii	n)	Max. Wt.	Description / Notes	Basis
	Depth	Width	Height	(lb)	Description / Notes	Dasis
Subcomponent: Circuit Board - Man	ufacturer: Sh	anghai Legra	nd 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	$S_{DS} = 2.50g$ for z/h = 1	I _P = 1.5
mounting. Mounted within and		R	UUDF	Levels:	$S_{DS} = 2.50 \text{ a for } z/h = 0$	ip = 1.0

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

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RFL	OSP-0257
	BY: Mohammad Karim
C	DATE: 08/10/2023
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SPECIAL SEISMIC CERTIFICATION

			TEST U	NITS		
	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)F 1-10-17	NTS-Newark	11-17-16
					4	
Monufo	acturer: LE				1 Martin Robert	N
	number: LE		OSP-0	257		
		HTING CONTROL PANEL		201 8		
	number: N/					
Contain	Dimensio		aht BY Res. Freq. (Hz)	ad Karim		
Depth			3	V		
5.0	17.0		7 <u>N/A N/A N</u>	I/A		
Code &	criteria: 20	022 CBC, ICC-ES AC156	DATE: 08/1	0/2 <mark>023</mark>		1
Test lat	boratory: N	TS-Newark				
Report:	: R86371 (d	dated 2-8-12), tested on 1	-23-12		2	1. 5%
S _{DS} (g)) z/h	A _{FLX-H} (g) A _{RIG}	r (g) A _{FLX-V} (g) A _{RIG-V}	(g)		and a long
2.50	1	4.00 3.0	1.68 0.68	8	1 Concertainty of the second	
2.50	0				1.100000	mare & Marcon
shake t	table test. U	nit maintained structural i	operating content during the ntegrity and remained function			
Mountir		equirement after shake ta	ted to fixture using (4) 3/8" la	a holto. The fixture	was rigid mounted to tabl	
Constru	5	-	A-1 enclosures with 14 ga ca	-	was figit filoufiled to tabl	с.
		-	ENC8S), Ohga Inc Power		DE3ECOE) Obas Inc. B	ower Supply Medu
Subcon	nponents:	(579B373G02), Ohga In Transformer (2-51-0305) board (LM-I) (77-0303-10	 Power Supply Assembly Power Supply Assembly Ohga Inc User Inferface Ohga Inc Relay Driver 4G01) Ohga Inc Group C 	(579B410G01), Ba Console (LM-U) (77 Board (RD) (483C4	sler - Transformer (BE318 7-0299-132), Ohga Inc L	320001), MCI Trans Jser console interfa
Testing	notes:	UUT 1 is called NTS-EN deg to X &Y).	V-1 in the test report. Testin	g was performed or	a uniaxial table in all 4 d	rections (X, Y, Z, a





SPECIAL SEISMIC CERTIFICATION

					U	UT 2		
Manufactu	urer: LEGR	AND						
Model nur	mber: LI-24	ļ						
Unit functi	ion: LIGHT	ING CONTROL	PANELS					A Result
Serial nun	nber: N/A							1
D	imensions	; (in)	Weight	Res	. Freq.	(Hz)	1 mart	
Depth	Width	Height	(lb)	F-B	S-S	V		
5.0	24.0	32.0	67	N/A	N/A	N/A		
Code & cr	iteria: 2022	2 CBC, ICC-ES	AC156					4
Test labor	atory: NTS	-Newark						
Report: R	86371 (dat	ed 2-8-12), teste	ed on 1-23-12	2				
S _{DS} (g)	z/h	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g) A _F	_{RIG-V} (g)		
2.50	1	4.00	3.00	1.68	200	0.68		
2.50	0	4.00	0.00	1.00	RC	SOF	6	and the second
•		= 1.5: Unit was		0	\ A A A A A A A	\		
		maintained stru			nained fu	unctional		
•		uirement after s			<u>- Y ((</u>			A Print of Addition
Mounting:		-			/ V T T A /\7 V V	T X A T / / 7 Y X X X	ts. The fixture was rigid r	nounted to ta
Constructi		6 ga carbon stee			\sim			
Subcompo		-					ply Module (437D535G06	
	•		- /////////////////////////////////////	(X N/ Y N/ Y N/ Y N/ Y N/ Y	***/**/**/*	レイメトレメンタメンタメン	3410G01), Ohga Inc Po	
	(5	79B442G01), B	asler - I rans	tormer (BE	=318200	J03), MCI	Transformer - Transform	er (2-51-030

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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 45deg to X &Y).

PANIA BUILDING CODE





SPECIAL SEISMIC CERTIFICATION

					U	UT 3								
Model nun	irer: LEGRA nber: LI-48							NTS	TES				MTS	
		NG CONTROL	PANELS											
Serial num		(:		Dee		(1.1-)	1				112	1	A PAST	h-
	imensions (. ,	Weight		. Freq. S-S	. ,		120	10					al'
Depth	Width	Height	(lb)	F-B		V NI/A	1		The second			Record		
5.0	24.0	45.0	85	N/A	N/A	N/A	1		-		1	1 0	BX D	A
		CBC, ICC-ES	AC156				1	1	and a				ANT I	
	atory: NTS-I							1	IN I			- A		×
	z/h	d 2-8-12), teste				(a)		1 1	1		-17			
S _{DS} (g) 2.50	2/11	~FLX-H (9)	A _{RIG-H} (g)	A _{FLX-V}	(9) A _R	RIG-V (g)	1		1 -	2 al		- 1	and the	
2.50	0	4.00	3.00	1.68	o(0.68	1	1-1-	-	-	-			
	-	= 1.5: Unit was	full of operat	ing conte	nt during	the	20	V/ = K						
		naintained stru						Mp.		-				1
		rement after s							*	-	100	9-12 ·		10
Mounting:	Un	it was rigid wal	I mounted to	fixture us	ing (4) 3/	/8" lag boli	ts. The	e fixture w	as rigid	mounted t	to table.			
Constructi	on: 16	ga carbon stee	el NEMA-1 er	closures	with 14 g	ga carbon	steel o	covers.	2					
Subcompo	onents: Leg	grand - Enclos	ures (LENC4	3S), Ohga	a Inc P	ower Supp	ply Mo	dule (437	D535G0	6), Ohga I	Inc Pov	wer Supr	ply Modu	le
		9B373G02), <mark>C</mark>												
	•	'9B442G01) <mark>, C</mark>	- VV // V // Y //		• •	,		•				•	,	
		CI Transformer		1 N I V I				1.1.1.1		•	<i>,</i> .			
		anghai Legr <mark>an</mark>			A REAL PROPERTY AND A REAL PROPERTY AND A	and the second					-			
		rd (579B404G 9B404G01)				,		, .	0					Car

(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 45deg to X &Y).

PRIA BUILDING CODE





SPECIAL SEISMIC CERTIFICATION

	ner: LEGRAN											
Unit function	Unit function: LIGHTING CONTROL PANELS											
Serial num	nber: N/A											
Di	imensions (i	n)	Weight	Res	. Freq.	(Hz)						
Depth	Width	Height	(lb)	F-B	S-S	V						
5.0	17.0	16.0	26	N/A	N/A	N/A						
Code & cri	iteria: 2022 C	BC, ICC-ES	AC156									
Test labora	atory: NTS-N	ewark										
Report: R	94679 (dated	2-27-14), tes	ted on 2-13-1	4								
S _{DS} (g)	z/h	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V}	(g) A _F	_{RIG-V} (g)						
2.50	1	4.00	3.00	1.68	200	0.68						
2.50	0	4.00	5.00	1.00	RCU	JOR						

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)

UUT 4

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 45deg to X &Y).







SPECIAL SEISMIC CERTIFICATION

Manufacturer: LEGRAND Model number: LMCP-24										
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	24.0	32.0	60	N/A	N/A	N/A				
Code & cr	iteria: 2022 C	BC, ICC-ES	AC156							
Test labor	atory: NTS-N	ewark								
Report: R	94679 (dated	2-27-14), tes	ted on 2-13-1	4		- 1				
S _{DS} (g)	z/h	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V}	(g) A _F	_{RIG-V} (g)				
2.50	1	4.00	3.00	1.68		0.68				
2.50	0	4.00	5.00	1.00	RCU	99E				

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)

UUT 5

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 45deg to X &Y).





ATTACHMENT 2: UNIT UNDER TEST SUMMARIES



SPECIAL SEISMIC CERTIFICATION

Manufactu	rer: LEGRAN	1D						
Model num	ber: LMCP-4	48-F						-
Unit function	on: LIGHTIN	G CONTROL	PANELS					100
Serial num	ber: N/A							
Di	mensions (i	n)	Weight	Res	. Freq.	(Hz)		NI
Depth	Width	Height	(lb)	F-B	S-S	V	8-1	FE
5.0	24.0	45.0	89	N/A	N/A	N/A		
Code & cri	teria: 2022 C	BC, ICC-ES	AC156				-	
Test labora	atory: NTS-N	ewark						-
Report: R	94679 (dated	2-27-14), tes	ted on 2-13-1	4			14	
S _{DS} (g)	z/h	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V}	(g) A _F	_{RIG-V} (g)	-	1
2.50	1	4.00	3.00	1 69		0.69		1
2.50	0	4.00	3.00	1.68	RCU	0.68)E	Co	10
Importance	-0	1.						



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 (16615), Shanghai Legrand Electric Co. - Circuit Board (16694)

UUT 6

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 45deg to X &Y).







SPECIAL SEISMIC CERTIFICATION

Manufacturer: LEGRAND										
Model number: LI-8										
Unit function: LIGHTING CONTROL PANELS										
Serial number: N/A										
Dimensions (in) Weight Res. Freq. (Hz)										
Width	Height	(lb)	F-B	S-S	V					
17.0	16.0	25	N/A	N/A	N/A					
iteria: 2022 C	BC, ICC-ES	AC156								
atory: NTS-N	ewark									
Report: PR052797.01 Rev 1 (dated 1-10-17), tested on 11-16-16										
$S_{DS}(g)$ z/h $A_{FLX-H}(g)$ $A_{RIG-H}(g)$ $A_{FLX-V}(g)$ $A_{RIG-V}(g)$										
1	4.00	3.00	1 68		0.68					
0	4.00	3.00	1.00	RCO	JOBE					
	nber: LI-8 on: LIGHTIN iber: N/A imensions (i Width 17.0 iteria: 2022 C atory: NTS-N R052797.01 F z/h 1	hber: LI-8 on: LIGHTING CONTROL hber: N/A imensions (in) Width Height 17.0 16.0 iteria: 2022 CBC, ICC-ES atory: NTS-Newark R052797.01 \mathbb{R} v 1 (dated z/h A_{FLX-H} (g) 1 4.00	hber: LI-8 on: LIGHTING CONTROL PANELS hber: N/A imensions (in) Weight Width Height (Ib) 17.0 16.0 25 iteria: 2022 CBC, ICC-ES AC156 atory: NTS-Newark R052797.01 Rev 1 (dated 1-10-17), teste z/h A_{FLX-H} (g) A_{RIG-H} (g) 1 4.00 3.00	hber: LI-8 on: LIGHTING CONTROL PANELS hber: N/A imensions (in) Weight Res Width Height (lb) F-B 17.0 16.0 25 N/A iteria: 2022 CBC, ICC-ES AC156 atory: NTS-Newark R052797.01 Rev 1 (dated 1-10-17), tested on 11- z/h A_{FLX-H} (g) A_{RIG-H} (g) A_{FLX-V} 1 4.00 3.00 1.68	hber: LI-8 on: LIGHTING CONTROL PANELS hber: N/A imensions (in) Weight Res. Freq. Width Height (Ib) F-B S-S 17.0 16.0 25 N/A N/A iteria: 2022 CBC, ICC-ES AC156 atory: NTS-Newark R052797.01 Rev 1 (dated 1-10-17), tested on 11-16-16 z/h A _{FLX-H} (g) A _{RIG-H} (g) A _{FLX-V} (g) A _F 1 4.00 3.00 1.68					

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.

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

Legrand - Enclosures (LENC8S), Shanghai Legrand Electric Co. - Power Supply Module (437D535G06), Shanghai Legrand Subcomponents: 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 Inferface 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)

UUT 7

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).

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SPECIAL SEISMIC CERTIFICATION

					U	UT 8										
Manufacturer: Model number Unit function: Serial number:	: LMCP-8 LIGHTIN	8-F	PANELS					2		.9		LMCI	88	3.00.00		
	nsions (i	-	Weight		. Freq.											
•	Nidth	Height	(lb)	F-B	S-S	V	AMICS	1							1	4
5.0	17.0	16.0	27	N/A	N/A	N/A	STING								8	
Code & criteria Test laboratory			AC156					s			1			1	0	
Report: PR05			1-10-17) test	ed on 11-	16-16		-							-		
S _{DS} (g)	z/h	$A_{FLX-H}(g)$	$A_{RIG-H}(g)$			_{RIG-V} (g)										
2.50 2.50	1 0	4.00	3.00	1.68		0.68 E										
Importance Fa shake table te per manufactu	st. Unit m	aintained stru	ctural integrit	y and rem			R	1.5	att Stopper		L				0	
Mounting:	Unit	was rigid wa	I mounted to	fixture us	ing (4) 3	5/8" lag bo	olts. The fi	ixture wa	as rigid	mount	ted to	table.				
Construction:	16 g	a carbon ste	el NEMA-1 en	closures	with 14	ga carbor	steel co	vers.	2							
Subcomponen	Elec (579 Elec (BE:	ctric Co Pov 9B410G01), S ctric Co Pov 31820003), N	ures (LENC85 ver Supply Mo hanghai Legr ver Supply (P ICI Transform 615), Shangha	odule (579 and Elect S) Assem er - Trans	B373G ric Co. bly Car sformer	02), Shar - Power S d (579B4 (2-51-030	nghai Legr upply (DA 10G01), B 05), Rocor	rand Ele ALI PS) / Basler - ⁻ m - Rela	ectric Co Assem Transfo ays (HD	o Po bly (57 prmer (I	wer Su 9B410 BE318	upply A 0G01), \$ 320001)	ssembly Shangh), Baslei	y Card ai Legra r - Trans	nd sformer	
Testing notes:	UUT X & Y		UT _T 2 in the te				formed on	n a uniax	kial tabl	e in all	4 dire	ctions ((X, Y, Z	, and 45	-deg to)





SPECIAL SEISMIC CERTIFICATION

Manufacturer: LEGRAND									
Model number: LI-48									
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	24.0	45.0	72	N/A	N/A	N/A			
Code & cr	iteria: 2022 C	BC, ICC-ES	AC156						
Test labor	atory: NTS-N	lewark							
Report: P	R052797.01 I	Rev 1 (dated	1-10-17), test	ed on 11-1	6-16				
S _{DS} (g)	z/h	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g) A _R	_{llG-V} (g)			
2.50	1	4.00	3.00	1.68	0	0.69			
2.50	0	4.00	3.00	1.00		0.68)E			
Importanc	Eactor I	1.5. Linit was	full of operat	ing content	during	the			

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 (DALI PS) Assembly (579B410G01), Shanghai Legrand Electric Co. - Power Supply (DALI PS) Assembly (579B410G01), Shanghai Legrand Electric Co. - Power Supply (DALI PS) Assembly (579B410G01), Shanghai Legrand Electric Co. - Power Supply (PS) Assembly Card (579B410G01), 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 (579B404G02), Shanghai Legrand Electric Co. - Lonworks LW/LC Communication Card (579B404G03)

UUT 9

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).
	BUILDING
	BUILDING





SPECIAL SEISMIC CERTIFICATION

UUT 10 Manufacturer: LEGRAND Model number: LI-24 Unit function: LIGHTING CONTROL PANELS Serial number: N/A Dimensions (in) Res. Freq. (Hz) Weight Width F-B S-S V Depth Height (lb) N/A 5.0 24.0 32.0 49 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 $A_{FLX-H}(g) = A_{RIG-H}(g) = A_{FLX-V}(g) = A_{RIG-V}(g)$ $S_{DS}(g)$ z/h 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. 16 ga carbon steel NEMA-1 enclosures with 14 ga carbon steel covers. Construction: Legrand - Enclosures (LENC24S), Shanghai Legrand Electric Co. - Power Supply Module (437D535G06), Shanghai Subcomponents: 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. - Lonworks LW/LC Communication Card (579B404G03), Shanghai Legrand Electric Co. - Lonworks LW/LC Communication Card (579B404G03), Shanghai Legrand Electric Co. - Lonworks LW/LC Communication Card (579B404G03), Shanghai Legrand Electric Co. - Lonworks LW/LC Communication Card (579B404G03), Shanghai Legrand Electric Co. - Lonworks LW/LC Communication Card (579B404G03), Shanghai Legrand Electric Co. - Lonworks LW/LC Communication Card (579B404G03), Shanghai Legrand Electric Co. - 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).





SPECIAL SEISMIC CERTIFICATION

Manufacturer: LEGRAND Model number: LMPC-24 Unit function: LIGHTING CONTROL PANELS Serial number: N/A Dimensions (in) Res. Freq. (Hz) Weight Width F-B S-S V Depth Heiaht (lb) N/A N/A N/A 5.0 24.0 32.0 50 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 $A_{FLX-H}(g) = A_{RIG-H}(g) = A_{FLX-V}(g) = A_{RIG-V}(g)$ $S_{DS}(g)$ z/h 2.50 1 4.00 3.00 1.68 0.68 0 2.50 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.

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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 (DALI PS) Assembly (579B410G01), Shanghai Legrand Electric Co. - Power Supply (DALI PS) Assembly (579B410G01), Shanghai Legrand Electric Co. - Power Supply (DALI PS) Assembly (579B410G01), Shanghai Legrand Electric Co. - Power Supply (PS) Assembly Card (579B410G01), 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 (16615), Shanghai Legrand Electric Co. - Circuit Board (16694)

UUT 11

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).

ING CODE





SPECIAL SEISMIC CERTIFICATION

UUT 12

Manufactu	rer: LE	GRAN	ID									
Model num	nber: LN	ИРС-4	8								Lacket	
Unit function	on: LIG	HTING	G CONTROL	PANELS								
Serial num	ber: N/	A										
Di	mensio	ons (ir	ר)	Weight	Res	. Freq.	(Hz)					
Depth	Wid	th	Height	(lb)	F-B	S-S	V					-
5.0	24.	0	45.0	97	N/A	N/A	N/A					
Code & cri	teria: 2	022 C	BC, ICC-ES	AC156					2			Lam
Test labora	atory: N	TS-Ne	ewark						6 23			
	R05279	7.01 R	Rev 1 (dated 1	11								
S _{DS} (g)	z/ł	1	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g) A _F	_{RIG-V} (g)					7 -
2.50	1		4.00	3.00	1.68	200	0.68				al diama	Frank
2.50	0				<0			Co			-	
•			1.5: Unit was		-							
			aintained stru			ained fu	unctional				and the second	
	acturer i		ement after sl			- Y ()	MV A W					
Mounting:			was rigid wal		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	V TTANIVY		$\pi\pi\Lambda\Lambda$		d mounted t	o table.	
Constructio		-	a carbon stee						XXXX			
Subcompo	nents:	-	and - Enclos						WXXXXX		,	-
												ply Assembly Car
												asler - Transforme
												nd Electric Co
			uit Board (166							, ·	0 0	
Testing no	tes:	UUT	12 is called I	EUT-6 in the	test repor	t. Testin	g was pe	rformed on a	a uniaxial tat	ole in all 4 di	rections (X.	, Y, Z, and 45-deg
J		to X	a) (. 00	9 POTZ	.020			(,	, , , , . .
									S O'			
							1 3933					
								ANDA	<u> </u>			
				$\langle \gamma \rangle$								
				ALTROP	AF	A NIN M		C C				
					10	UI	DIN	0				