



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

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

OFFICE USE ONLY

APPLICATION #: OSP-0009

OSHPD Special Seismic Certification Preapproval (OSP)

Type: New Renewal

Manufacturer Information

Manufacturer: Eaton

Manufacturer's Technical Representative: Mark Allen

Mailing Address: 845 Corporate Circle, Sumter, SC 29154

Telephone: (803) 481-6873

Email: MarkLAllen@eaton.com

Product Information

Product Name: Panelboards

Product Type: Panelboards

Product Model Number: PRL 1a, 1af, 1a-LX, 2a, 2af, 2a-LX, 3a, 3E, 4B, Pow-R-Command

General Description: Lighting, Appliance or Distribution Panelboards for connection of feeder and branch circuit
Devices in electrical distribution systems.

Mounting Description: Rigid, Wall Mounted

Tested Seismic Enhancements: None

Applicant Information

Applicant Company Name: Eaton

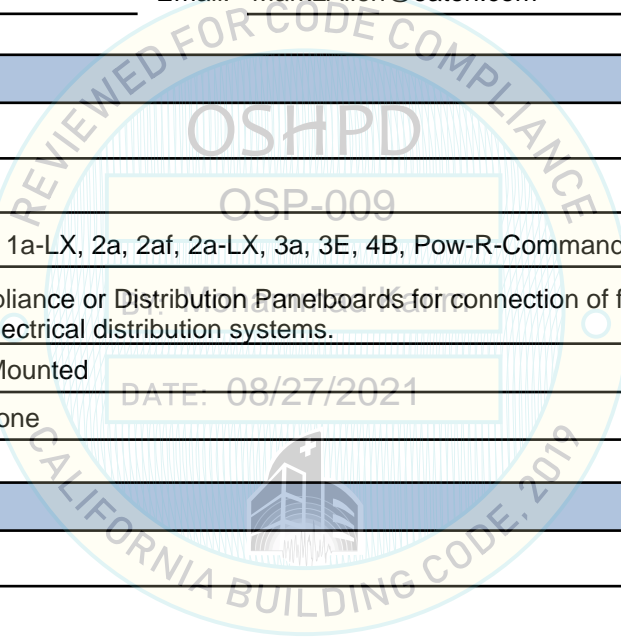
Contact Person: Eddie Wilkie

Mailing Address: 175 Vista Blvd, Arden, NC 28704

Telephone: (828) 651-0707

Email: eddiewilkie@eaton.com

Title: Engineering Director





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

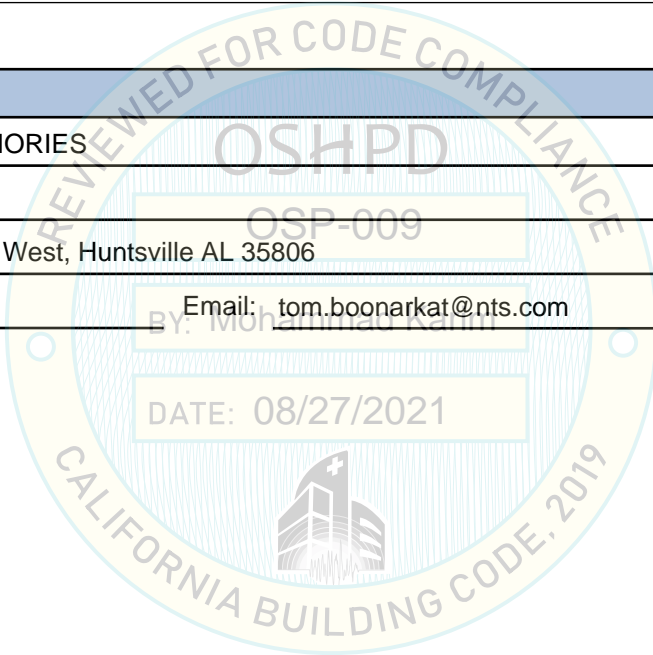
Company Name: ISAT SEISMIC BRACING
Name: WILLIAM JOERGER California License Number: S4545
Mailing Address: 14848 Northam Street, La Mirada, CA 90638
Telephone: (714) 920-6066 Email: wvjoerger@isatsb.com

Certification Method

GR-63-Core ICC-ES AC156 IEEE 344 IEEE 693 NEBS 3
 Other (Please Specify): _____

Testing Laboratory

Company Name: WYLE LABORATORIES
Contact Person: Tom Boonarkat
Mailing Address: 7800 Highway 20 West, Huntsville AL 35806
Telephone: (256) 716-4520 Email: tom.boonarkat@nts.com





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Seismic Parameters

Design Basis of Equipment or Components (F_p/W_p) = 2.27

SDS (Design spectral response acceleration at short period, g) = 2.23

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

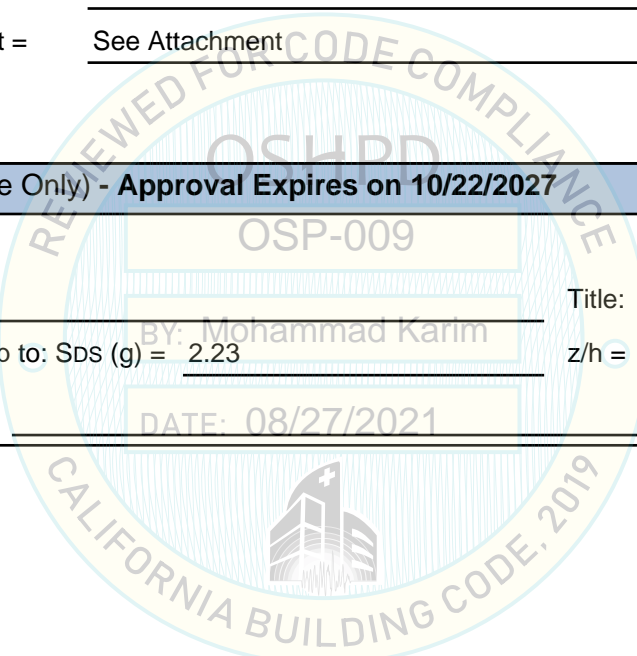
OSHPD Approval (For Office Use Only) - Approval Expires on 10/22/2027

Date: 8/27/2021

Name: Mohammad Karim Title: Supervisor, Health Facilities

Special Seismic Certification Valid Up to: SDS (g) = 2.23 z/h = 1

Condition of Approval (if applicable): DATE: 08/27/2021



Certified Product Range Summary
PRL & PRLX Panelboards (Wall Mounted)⁶

Model/(UUT Identifier)	Maximum Voltage Rating (Volts)	Maximum Continuous Current Rating (Amperes)	Maximum Enclosure Dimensions			Bus Material	Maximum Weight (lbs.)	S _{DS} (g)	Notes	UUT
			Width (in.)	Depth (in.)	Height (in.)					
PRL 1a/2a (MEDP092012-022)	480	225	32.5	6.44	90.25	Al	298	2.23	1,3	19
PRL 1a/2a (MEDP092012-021)	240	400	20.75	6.44	60.25	Cu	138		1,3	18
PRL1a, 1aF, 1a-LX, Pow-R-Command	240	400	20 - 32 ⁴	16.25 ⁴	24 - 90 ⁴	Cu/Al	298		1,2,3	Interpolated
PRL1X, 1XF, Pow-R-Command	480	400	20 - 32 ⁴	16.25 ⁴	24 - 90 ⁴	Cu/Al	298		1,2,3	Interpolated
PRL1X, 1XF, 1X-LX, Pow-R-Command	240	400	20 - 32 ⁴	16.25 ⁴	24 - 90 ⁴	Cu/Al	298		1,2,3	Interpolated
PRL2aF	240	400	20 - 32 ⁴	16.25 ⁴	24 - 90 ⁴	Cu/Al	298		1,2,3	Interpolated
PRL2XF	240	400	20 - 32 ⁴	16.25 ⁴	24 - 90 ⁴	Cu/Al	298		1,2,3	Interpolated
PRL2a, 2a-LX, Pow-R-Command	480	400	20 - 32 ⁴	16.25 ⁴	24 - 90 ⁴	Cu/Al	298		1,2,3	Interpolated
PRL2X, 2X-LX, Pow-R-Command	480	400	20 - 32 ⁴	16.25 ⁴	24 - 90 ⁴	Cu/Al	298		1,2,3	Interpolated
PRL3a (MEDP092012-025)	100	480	20.5	6.44	72.25	Al	194		1,3	20
PRL3a	600	800	20 - 32 ⁴	16.25 ⁴	24 - 90 ⁴	Cu/Al	194		1,2,3	Interpolated
PRL3X	600	800	20 - 32 ⁴	16.25 ⁴	24 - 90 ⁴	Cu/Al	194		1,2,3	Interpolated
PRL3X (MEDP2018OS-007)	480	600	21.75	6.25	91.5	Cu	374		1,3	1
PRL3E (MEDP092012-027)	480	600	32.5	6.5	90.25	Cu	300		1,3	21
PRL3E	480	800	20 - 32 ⁴	16.25 ⁴	24 - 90 ⁴	Cu/Al	300		1,2,3	Interpolated
PRL4X (MEDP2019OS-002)	480	1200	36	15	90	Cu	634		2,3	13
PRL4	600	1200	24 - 44 ^{4,5}	10.4-16.25 ⁴	57 - 90 ⁴	Cu/Al	904	1,2,3	Interpolated	
PRL4X	600	1200	24 - 44 ^{4,5}	10.4-16.25 ⁴	57 - 90 ⁴	Cu/Al	904	1,2,3	Interpolated	
PRL4 (MEDP092012-029)	480	1200	40	17.25	91.5	Cu	904	2,3	22	

1. NEMA Type 1 Enclosure
2. NEMA Type 3R/12 Enclosure
3. Mild Carbon Steel construction
4. Nominal Dimensions - does not include extraneous hardware or operator extensions
5. Maximum depth for 44" panels is 10.4".
6. Manufactured by Eaton

**Panelboards
Certified Major Sub-component Data**

Miniature Circuit Breakers (MCB) 1 - 3 Poles (1 Pole Data Shown [^])								
Model	Current Range (Amperes)	Maximum Voltage (Volts)	Dimensions / Weights				Manufacturer	UUT
			Width (in.)	Depth (in.)	Height (in.)	Weight (lbs.)		
BAB1020	20	120/240	1.00	2.91	3.13	1.13	Eaton	19
BAB1070	70	120/240	1.00	2.91	3.13	1.13	Eaton	19
BA*	10-125A	120/240	1.00 [^]	2.91	3.13	1.13	Eaton	Interpolated
QBAF1015	15	120/240	1.00	2.38	3.19	0.75	Eaton	19
QBAF1020	20	120/240	1.00	2.38	3.19	0.75	Eaton	19
QBAF*	15-20A	120/240	1.00 [^]	2.38	3.19	0.75	Eaton	Interpolated
QBGF*	15-50A	120/240	1.00 [^]	2.38	3.19	1.75	Eaton	Interpolated
QBGF1040	40	120/240	1.00	2.38	3.19	1.75	Eaton	19
QBGF2015	15	120/240	2.00	2.38	3.19	1.75	Eaton	19
GHQSRP*	15-20	120/240	1.00 [^]	2.81	4.63	2.25	Eaton	Interpolated
GHQSRP1020	20	120/240	1.00	2.81	4.63	2.25	Eaton	18
GHQSRP2020	20	120/240	2.00	2.81	4.63	4.50	Eaton	18

* - All breakers are 1" width per pole

Molded Case Circuit Breakers (MCCB) 1 - 3 Poles (3 Pole Data Shown)								
Frame	Current Range (Amperes)	Maximum Voltage (Volts)	Dimensions / Weights				Manufacturer	UUT
			Width (in.)	Depth (in.)	Height (in.)	Weight (lbs.)		
GHB3020	20	480	3	2.63	4	1.37	Eaton	18
GHB3100	100	480	3	2.63	4	1.37	Eaton	18
GHB	15-100	480	3	2.63	4	1.37	Eaton	Interpolated
EGB3020FFB	20	480	3	3	5.5	2.28	Eaton	21
EGB3125FFB	125	480	3	3	5.5	2.28	Eaton	21
EG	15-125	480	3	3	5.5	2.28	Eaton	Interpolated
EHD2020	20	600	2.75	3.38	6	3	Eaton	22
EHD3020	20	600	4.13	3.38	6	4.5	Eaton	22
F	10-225	600	4.13	3.38	6	4.5	Eaton	Interpolated
JD3250	250	600	4.13	4.06	10	13.5	Eaton	22
J	70-250	600	4.13	4.06	10	13.5	Eaton	Interpolated
KD3400	400	600	5.49	4.31	10.13	11.5	Eaton	21
K	70-400	600	5.49	4.31	10.13	11.5	Eaton	Interpolated
LG3600	600	600	8.25	3.81	10.75	20	Eaton	21
L	125-600	600	8.25	3.81	10.75	20	Eaton	Interpolated
M	300-800	600	8.25	4.06	16	30	Eaton	Interpolated
MDL3800	800	600	8.25	4.06	16	30	Eaton	22
N	400-1200	600	8.25	5.5	16	45	Eaton	Interpolated
NGS312033E	1200	600	8.25	5.5	16	45	Eaton	22

**Panelboards
Certified Major Sub-component Data**

Molded Case Circuit Breakers (MCCB) 1 - 3 Poles (3 Pole Data Shown) - Power Defense								
(Model)/Frame	Size (Amps)	Voltage	Dimensions / Weights				Manufacturer	Test Status
			Width (in.)	Depth (in.)	Height (in.)	Weight (lbs.)		
PDG23M0225	225	600	4.12	3.5	6	4.21	Eaton	UUT 13
PD-2	15-225	600	4.12	3.5	6	4.21	Eaton	Interpolated
PDG33M0400	400	600	5.47	4.3	10.13	11.02	Eaton	UUT 13
PD-3	45-400	600	5.47	4.3	10.13	11.02	Eaton	Interpolated
PDG33M0600	600	600	5.47	4.3	10.13	12.36	Eaton	UUT 13, UUT 1
PD-3	45-600	600	5.47	4.3	10.13	12.36	Eaton	Interpolated
PDG43M0800	800	600	8.25	4.38	16	30	Eaton	UUT 13
PD-4	300-800	600	8.25	4.38	16	30	Eaton	Interpolated
PD-5	320-1200	600	8.25	5.5	16	46.8	Eaton	Interpolated
PDG53M1200	1200	600	8.25	5.5	16	46.8	Eaton	UUT 13

Surge Protective Devices (SPD)								
Model	Maximum Voltage (Volts)	kA (Amperes)	Dimensions / Weights				Manufacturer	UUT
			Width (in.)	Depth (in.)	Height (in.)	Weight (lbs.)		
SPD050480Y2A	480	50	8.8	2.52 (3.45)	5.4	3.5	Eaton	21
SPDXXXXXY2A	240-600	50-200	8.8	2.52 (3.45)	5.4	3.5	Eaton	Interpolated
		250-400	8.8	4.85 (5.78)	5.4	7	Eaton	Interpolated
SPD200480Y2A	480	200	8.8	4.85 (5.78)	5.4	7	Eaton	18,22

Pow-R-Command Controllers							
Family	Model	Dimensions / Weights				Manufacturer	UUT
		Width (in.)	Depth (in.)	Height (in.)	Weight (lbs.)		
Pow-R-Command	PRC25	11	3.25	4.75	7.25	Eaton	19
	PRC750	13.63	4.25	5.1	6.95	Eaton	Interpolated
	PRC1000	13.63	4.25	5.1	6.95	Eaton	Interpolated
	PRC2000	13.63	4.25	5.1	6.95	Eaton	18

DATE: 08/27/2021

Contactors							
Family	Model	Dimensions / Weights				Manufacturer	UUT
		Width (in.)	Depth (in.)	Height (in.)	Weight (lbs.)		
ASCO 920	920310060	8	3.5	9.5	7	Emerson	20

Enclosures (Carbon steel)						
NEMA Type	Dimensions / Weights			Manufacturer	UUT	
	Width (in.)	Depth (in.)	Height (in.)			
1	20.75	6.44	60.25	Eaton	18	
1	20.5	6.44	72.25	Eaton	20	
1	20 - 32	5.75	24, 30, 36, 42, 48, 60, 72, 90	Eaton	Interpolated	
1	32.5	6.5	90.25	Eaton	21	
1	32.5	6.44	90.25	Eaton	19	
1	24 - 44	10.4	57, 73.5, 90	Eaton	Interpolated	
3R	20, 28	7.19	24, 30, 36, 42, 48, 60, 72, 90	Eaton	Interpolated	
3R	24, 36	14.75	57, 73.5, 90	Eaton	Interpolated	
3R	40	17.25	91.5	Eaton	22	

UUT 1 (Unit Under Test) Summary Sheet

Manufacturer: Eaton

Model Number: PRL3X (MEDP2018OS-007)

Product Construction Summary: NEMA 1 enclosure type, painted carbon steel.

Options/Component Summary: 600A, 208Y/120V, Flush mount PRL3X Panelboard

Main Breaker: (1) PD3 600A breaker (PDG33M0600TFAL)

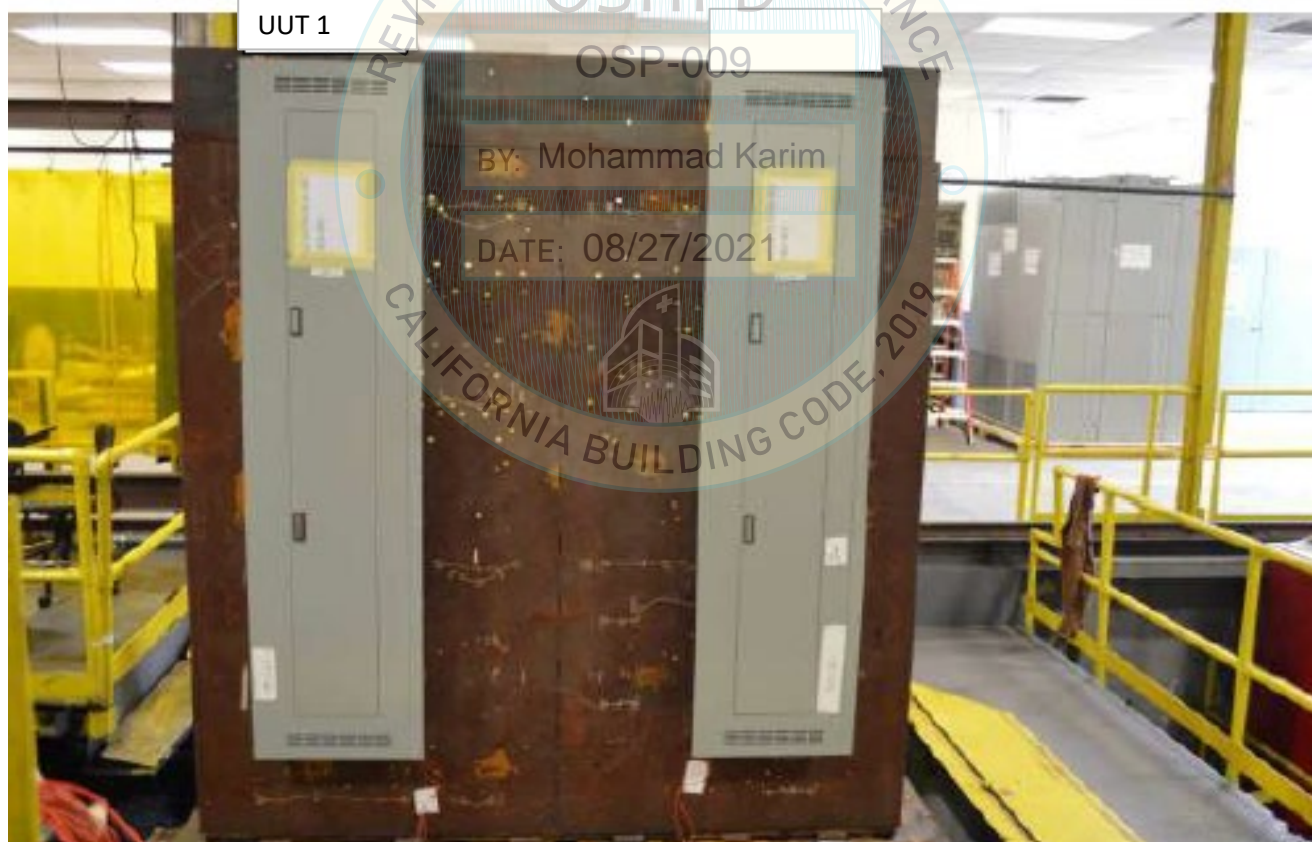
Feeder Breaker: (18) FD3100 breakers

UUT Properties (As Tested)

Weight (lbs.)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Width	Depth	Height	Front-Back	Side-Side	Vertical
374	21.8	6.3	91.5	N/A	N/A	N/A

Seismic Test Parameters

Building Code	Test Criteria	C.G. Height (in.)	S_{Ds} (g)	z/h	I_p	A_{Fix-H}	A_{Rig-H}	A_{Fix-V}	A_{Rig-V}
CBC 2019	ICC-ES AC156	N/A	2.23	1	1.5	3.57	2.68	1.49	0.60



UUT was mounted to a rigid wall fixture in a surfaced mounted arrangement with (4) 1/2" bolts (Grade 5). The steel frame (carbon steel) was welded to the shake table.

PR113244

UUT 13 (Unit Under Test) Summary Sheet

Manufacturer: Eaton

Model Number: PRL4X (MEDP2019OS-002)

Product Construction Summary: NEMA 3R enclosure type, painted carbon steel.

Options/Component Summary: 1200A, 480Y/277V AC (Max), Surface mount PRL4X Panelboard

Main Breaker: (1) PD5 breaker (PDG53M1200E2NN)

Feeder Breakers: (2) PD2 breaker (PDG23M0225TFFL); (1) PD3 400A breaker (PDG33M0400TFAL);

(1) PD3 600A breaker (PDG33M0600TFAL); (1) PD4 breaker (PDG43M0800TFAN)

UUT Properties (As Tested)

Weight (lbs.)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Width	Depth	Height	Front-Back	Side-Side	Vertical
634	36.0	15.0	90.0	N/A	N/A	N/A

Seismic Test Parameters

Building Code	Test Criteria	C.G. Height (in.)	S_{Ds} (g)	z/h	l_p	A_{Fix-H}	A_{Rig-H}	A_{Fix-V}	A_{Rig-V}
CBC 2019	ICC-ES AC156	N/A	2.23	1	1.5	3.57	2.68	1.49	0.60

UUT maintained structural integrity and functionality as observed in post test inspection and operation checks.

BY: Mohammad Karim

DATE: 08/27/2021



UUT was mounted to a rigid wall fixture with (4) 1/2 bolts (Grade 5). The steel frame (carbon steel) was welded to the shake table.

PR102491

UUT 18 (Unit Under Test) Summary Sheet

Manufacturer: Eaton Corporation

Product Line: Low Voltage Panelboards

Model Number: PRL1a/2a (MEDP092012-021)

Product Construction Summary: Cabinet constructed of powder-coated carbon steel, NEMA Type 1 enclosure rating.

400A Copper Bus.

Options/Component Summary: LGH Main Breaker (LGH3400); KD Sub Feed Bkr (KD3400);

Pow-R-CMD 2000 (42C2588G02); Feeder Bkrs - (2) GHB3100, (1) GHB3020, (2) GHQRSP1020, (2) GHQRSP2020,

(6) BAB3020H; 200kA Surge Protective Device - (1) SPD200480Y2A

UUT Properties (As Tested)

Weight (lbs.)	Enclosure Dimensions (in.)			Lowest Natural Frequency (Hz)		
	Width	Depth	Height	Front-Back	Side-Side	Vertical
138	20.75	6.44	60.25	N/A	N/A	N/A

Seismic Test Parameters

Building Code	Test Criteria	C.G. Height (in.)	S_{Ds} (g)	z/h	I_p	A_{Flx-H}	A_{Rig-H}	A_{Flx-V}	A_{Rig-V}
CBC 2019	ICC-ES AC156	N/A	2.23	1	1.5	3.57	2.68	1.49	0.60

UUT maintained structural integrity and functionality as confirmed in post test inspection and operation checks.



UUT (right) was mounted to a rigid frame using (4) 1/2" bolts. The steel frame was welded to the shake table.

70566R12

UUT 19 (Unit Under Test) Summary Sheet

Manufacturer: Eaton Corporation

Product Line: Low Voltage Panelboards

Model Number: PRL1a/2a (MEDP092012-022)

Product Construction Summary: Cabinet is constructed of powder-coated carbon steel, NEMA Type 1 enclosure.
225A Aluminum Bus.

Options/Component Summary: Pow-R-Command Controller (PRC25)

Feeder Bkrs - (1) BAB1070, (9) BAB1020, (2) QBGH2050, (1) QBGF1040, (1) QBAF1020, (2) QBGF2015, (1) QBAF1015,
(1) QBGF1015

UUT Properties (As Tested)

Weight (lbs.)	Enclosure Dimensions (in.)			Lowest Natural Frequency (Hz)		
	Width	Depth	Height	Front-Back	Side-Side	Vertical
298	32.5	6.44	90.25	N/A	N/A	N/A

Seismic Test Parameters

Building Code	Test Criteria	C.G. Height (in.)	S _{DS} (g)	z/h	I _p	A _{Fix-H}	A _{Rig-H}	A _{Fix-V}	A _{Rig-V}
CBC 2019	ICC-ES AC156	N/A	2.23	1	1.5	3.57	2.68	1.49	0.60

UUT maintained structural integrity and functionality as confirmed in post test inspection and operation checks.



UUT (center) was mounted to a rigid frame using (4) 1/2" bolts. The steel frame was welded to the shake table.

70566R12

UUT 20 (Unit Under Test) Summary Sheet

Manufacturer: Eaton Corporation

Product Line: Low Voltage Panelboards

Model Number: PRL3a (MEDP092012-025)

Product Construction Summary: Cabinet is constructed of powder-coated carbon steel, NEMA Type 1 enclosure.

100A Aluminum Bus.

Options/Component Summary: Main Lugs; ASCO Contactor (920310060);

Feeder Bkrs - (8) BAB3020H, (2) BAB3020

UUT Properties (As Tested)

Weight (lbs.)	Enclosure Dimensions (in.)			Lowest Natural Frequency (Hz)		
	Width	Depth	Height	Front-Back	Side-Side	Vertical
194	20.5	6.44	72.25	N/A	N/A	N/A

Seismic Test Parameters

Building Code	Test Criteria	C.G. Height (in.)	S _{DS} (g)	z/h	I _p	A _{Fix-H}	A _{Rig-H}	A _{Fix-V}	A _{Rig-V}
CBC 2019	ICC-ES AC156	N/A	2.23	1	1.5	3.57	2.68	1.49	0.60

UUT maintained structural integrity and functionality as confirmed in post test inspection and operation checks.



UUT (left) was mounted to a rigid frame using (4) 1/2" bolts. The steel frame was welded to the shake table.

70566R12

UUT 21 (Unit Under Test) Summary Sheet

Manufacturer: Eaton Corporation

Product Line: Low Voltage Panelboards

Model Number: PRL3E (MEDP092012-027)

Product Construction Summary: Cabinet is constructed of powder-coated carbon steel, NEMA Type 1 enclosure.

600A Copper Bus.

Options/Component Summary: LG Main Breaker (LG3600); KD Sub Feed Bkr (KD3400);

Feeder Bkrs - (6) EGB3020FFB, (2) EGB3125FFB; 50kA Surge Protective Device - (1) SPD050480Y2A

UUT Properties (As Tested)

Weight (lbs.)	Enclosure Dimensions (in.)			Lowest Natural Frequency (Hz)		
	Width	Depth	Height	Front-Back	Side-Side	Vertical
300	32.5	6.5	90.25	N/A	N/A	N/A

Seismic Test Parameters

Building Code	Test Criteria	C.G. Height (in.)	S_{DS} (g)	z/h	I_p	A_{Fix-H}	A_{Rig-H}	A_{Fix-V}	A_{Rig-V}
CBC 2019	ICC-ES AC156	N/A	2.23	1	1.5	3.57	2.68	1.49	0.60

UUT maintained structural integrity and functionality as confirmed in post test inspection and operation checks.



UUT was mounted to a rigid frame using (4) 1/2" bolts. The steel frame was welded to the shake table.

70566R12

UUT 22 (Unit Under Test) Summary Sheet

Manufacturer: Eaton Corporation

Product Line: Low Voltage Panelboards

Model Number: PRL4 (MEDP092012-029)

Product Construction Summary: Cabinet is constructed of powder-coated carbon steel, NEMA Type 3R enclosure.

1200A Copper Bus.

Options/Component Summary: NG Main Breaker (NGS312033E),

Feeder Bkrs - (1) MDL3800 (1) LGE3600, (2) KD3400, (2) JD3250, (2) EHD3020, (2) EHD2020;

200kA Surge Protective Device - (1) SPD200480Y2A

UUT Properties (As Tested)

Weight (lbs.)	Enclosure Dimensions (in.)			Lowest Natural Frequency (Hz)		
	Width	Depth	Height	Front-Back	Side-Side	Vertical
904	40	17.25	91.5	N/A	N/A	N/A

Seismic Test Parameters

Building Code	Test Criteria	C.G. Height (in.)	S_{DS} (g)	z/h	I_p	A_{Flx-H}	A_{Rig-H}	A_{Flx-V}	A_{Rig-V}
CBC 2019	ICC-ES AC156	N/A	2.23	1	1.5	3.57	2.68	1.49	0.60

UUT maintained structural integrity and functionality as confirmed in post test inspection and operation checks.



UUT was mounted to a rigid frame using (4) 1/2" bolts. The steel frame was welded to the shake table.

70566R12