APPLICATION FOR HCAI SPECIAL SEISMIC CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY

APPLICATION #: OSP-0486

HCAI Special Seismic Certification Preapproval (OSP)

Type: ☐ New ☒ Renewal

Manufacturer Information

Manufacturer: Eaton Corporation

Manufacturer's Technical Representative: Mario Perciballi

Mailing Address: 3301 Spring Forest Rd, Raleigh, NC 27616

Telephone: (919) 878-1071 Email: MarioAPerciballi@Eaton.com

Product Information

Product Name: UPS and Batteries

Product Type: UPS

Product Model Number: 9155 UPS, 9355 UPS, 9355 Options Cabinet, 9X55 Battery Cabinet

General Description: Backup power systems constructed of formed carbon steel framing and cabinets with capacity Ranging from 8 – 30 kVA. UL924 option.

Mounting Description: Rigid, Floor Mounted

Tested Seismic Enhancements: None

Applicant Information

Applicant Company Name: TRU Compliance, by Structural Integrity Associates, Inc.

Contact Person: Galen Reid

Mailing Address: 233 SW Wilson Ave., Suite 101, Bend, OR 97702

Telephone: (541) 604-7225 Email: greid@structint.com

Title: Director, TRU Compliance

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BY: Muhammad Kashif
DATE: 11/22/2022
CALIFORNIA BUILDING CODE, 2019

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

Company Name: STRUCTURAL INTEGRITY ASSOCIATES, INC.

Name: Andrew Coughlin California License Number: S6082

Mailing Address: 5215 Hellyer Ave, Suite 101, San Jose, CA 95138-1025

Telephone: (415) 635-8461 Email: acoughlin@structint.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: Robert Bridges

Mailing Address: 7800 Highway 20 West, Huntsville AL 35806

Telephone: (256) 837-4411 Email: Robert.Bridges@nts.com

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Seismic Parameters

Design Basis of Equipment or Components (F_p/W_p) = 1.33

S_{DS} (Design spectral response acceleration at short period, g) = 1.85 (z/h = 1); 2.96 (z/h = 0)

a_p (Amplification factor) = 1.0

R_p (Response modification factor) = 2.5

Ω_0 (System overstrength factor) = 2.0

I_p (Importance factor) = 1.5

z/h (Height ratio factor) = 1 and 0

Natural frequencies (Hz) = See Attachment

Overall dimensions and weight = See Attachment

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HCAI Approval (For Office Use Only) - Approval Expires on 11/22/2028

Date: 11/22/2022

Name: Mohammad Karim Title: Supervisor, Health Facilities

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

Condition of Approval (if applicable):

SPECIAL SEISMIC CERTIFICATION
CERTIFIED COMPONENT MATRIX

2200643-CR-001-R0

TRU COMPLIANCE

Manufacturer: Eaton Corporation
Model Line: 9X55 UPS and Accessories

TABLE 1

Certified Product Construction Summary:
Formed carbon steel internal framing with carbon steep panelized walls, base and roof.

Certified Options Summary:
See Certified Subcomponent Matrices

Mounting Configuration:
Base mounted - rigid
Note: Installed mounting configuration must be of similar configuration and equivalent strength and stiffness to those tested.

Building Code: CBC 2022 ***Seismic Certification Limits:*** S_{DS}= ***1.85 g*** ***z/h=1.0*** S_{DS}= ***2.96 g*** ***z/h=0.0*** I_P= ***1.5***

Model Line	Model[1]	Dimensions (in)[2]			Weight (lb)[2]	Notes	UUT
		Depth	Width	Height			
9155 (2-HIGH) UPS w/ 32 Battery	K408X1X0XXXX0X0	33.7	12.0	32.2	459	*8 kVA*	Extrap.
	K410X1X0XXXX0X0	33.7	12.0	32.2	459	*10 kVA*	Extrap.
	K421X1X0XXXX0X0	33.7	12.0	32.2	459	*12 kVA*	Interp.
	G410110000	33.7	12.0	32.2	459	*12 kVA (9155-10GE)*	16
	K415X1X0XXXX0X0	33.7	12.0	32.2	459	*15 kVA*	Interp.
9155 (3-HIGH) UPS w/ 64 Battery	K408X2X0XXXX0X0	33.7	12.0	47.8	736	*8 kVA*	Interp.
	K410X2X0XXXX0X0	33.7	12.0	47.8	736	*10 kVA*	Interp.
	K412X2X0XXXX0X0	33.7	12.0	47.8	736	*12 kVA*	Interp.
	K415X2X0XXXX0X0	33.7	12.0	47.8	736	*15 kVA*	Interp.
9155 (3-HIGH) UPS w/ 32 Battery w/ Trans. Mod.	K408X3X0XXXX0X0	33.7	12.0	47.8	736	*8 kVA*	Interp.
	K410X3X0XXXX0X0	33.7	12.0	47.8	736	*10kVA*	Interp.
	K412X3X0XXXX0X0	33.7	12.0	47.8	736	*12 kVA*	Interp.
	K415X3X0XXXX0X0	33.7	12.0	47.8	736	*15 kVA*	Interp.
9155 (3-HIGH) UL 924 1PH UPS	BH-08KEL277-100	33.7	12.0	47.8	736	*7.2 kVA*	Interp.
	BH-10KEL277-10	33.7	12.0	47.8	736	*9 kVA*	Interp.

Notes:
1. "X" Indicates selction digit not critical to seismic performance; see nomenclature description
2. Maximum dimensions without seismic mounting kit, maxiumum weight includes seismic mounting kit.

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SPECIAL SEISMIC CERTIFICATION
CERTIFIED COMPONENT MATRIX

2200643-CR-001-R0

TRU COMPLIANCE

Manufacturer: Eaton Corporation
Model Line: 9X55 UPS and Accessories

TABLE 2

Certified Product Construction Summary:
Formed carbon steel internal framing with carbon steep panelized walls, base and roof.

Certified Options Summary:
See Certified Subcomponent Matrices

Mounting Configuration:
Base mounted - rigid
Note: Installed mounting configuration must be of similar configuration and equivalent strength and stiffness to those tested.

Building Code: CBC 2022 ***Seismic Certification Limits:*** S_{DS}= ***1.85 g*** ***z/h=1.0*** S_{DS}= ***2.96 g*** ***z/h=0.0*** I_P= ***1.5***

Model Line	Model[1]	Dimensions (in)[2]			Weight (lb)[2]	Notes	UUT
		Depth	Width	Height			
9355 (2-HIGH) UPS w/ 32 Battery	KA10X1X0XXXX0X0	33.7	12.0	32.2	480	*10 kVA*	Extrap.
	KA15X1X0XXXX0X0	33.7	12.0	32.2	480	*15 kVA*	Interp.
	KA1511100000010	33.7	12.0	32.2	480	*15 kVA*	1
9355 (3-HIGH) UPS w/ 64 Battery	KA10X2X0XXXX0X0	33.7	12.0	47.8	755	*10 kVA*	Extrap.
	KA15X2X0XXXX0X0	33.7	12.0	47.8	755	*15 kVA*	Interp.
	P-103000337	33.7	12.0	47.8	755	*15 kVA*	Interp.
	103006185	33.7	12.0	47.8	755	*15 kVA (9355-15-14GE)*	17
9355 (3-HIGH) UL 924 3PH UPS	BH-10KEL2083P-100	33.7	12.0	47.8	755	*8.5 kVA 208V*	Extrap.
	BH-15KEL2083P-100	33.7	12.0	47.8	755	*13.1 kVA 208V*	Interp.
9355 (3-HIGH) UPS w/ 32 Battery w/ Trans. Mod.	KA10X3X0XXXX0X0	33.7	12.0	47.8	755	*10 kVA*	Extrap.
	KA15X3X0XXXX0X0	33.7	12.0	47.8	755	*15 kVA*	Interp.
	KA15134000000010	33.7	12.0	47.8	755	*15 kVA*	2
9355 (20-30 kVA)	KB20XXX0XXXXXXX	34.1	20.0	67.0	1,155	*20 kVA*	Interp.
	KB30XXX0XXXXXXX	34.1	20.0	67.0	1,155	*30 kVA*	Interp.
	KB3013100000010	34.1	20.0	67.0	1,155	*30 kVA*	4
9355 (20-30 kVA) Options Cabinet	KBT0X0XXXXXXXXX	34.1	20.0	67.0	222	*MBS Only*	Interp.
	KBT0X1XXXXXXXXX	34.1	20.0	67.0	490	*MBS + Input Xfrmr*	Interp.
	KBT0X2XXXXXXXXX	34.1	20.0	67.0	490	*Input Xfrmr Only*	Interp.
	KBT0X3XXXXXXXXX	34.1	20.0	67.0	490	*Output Xfrmr Only*	Interp.
	KBT001100000010	34.1	20.0	67.0	490	*MBS + Input Xfrmr*	5

Notes:
1. "X" Indicates selction digit not critical to seismic performance; see nomenclature description
2. Maximum dimensions without seismic mounting kit, maxiumum weight includes seismic mounting kit.

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SPECIAL SEISMIC CERTIFICATION
CERTIFIED COMPONENT MATRIX

2200643-CR-001-R0

TRU COMPLIANCE

Manufacturer: Eaton Corporation
Model Line: 9X55 UPS and Accessories

TABLE 3

Certified Product Construction Summary:
Formed carbon steel internal framing with carbon steep panelized walls, base and roof.

Certified Options Summary:
See Certified Subcomponent Matrices

Mounting Configuration:
Base mounted - rigid
Note: Installed mounting configuration must be of similar configuration and equivalent strength and stiffness to those tested.

Building Code: CBC 2022 ***Seismic Certification Limits:*** S_{DS}= ***1.85 g z/h=1.0*** S_{DS}= ***2.96 g z/h=0.0*** I_P= ***1.5***

Model Line	Model[1]	Dimensions (in)[2]			Weight (lb)[2]	Notes	UUT
		Depth	Width	Height			
9X55 Battery Cabinets	103004192-5501	33.7	12.0	32.2	580	*2-High, 8-15 kVA, 64 Battery*	Extrap.
	BH-EBM96EL-600	33.7	12.0	47.8	855	*3-High, 8-15 kVA UL 924, 96*	Interp.
	103004193-5501	33.7	12.0	47.8	855	*3-High, 8-15 kVA, 96 Battery*	3

Notes:
1. "X" Indicates selction digit not critical to seismic performance; see nomenclature description
2. Maximum dimensions without seismic mounting kit, maxiumum weight includes seismic mounting kit.

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SPECIAL SEISMIC CERTIFICATION PRODUCT NOMENCLATURE

2200643-CR-001-R0

TRU COMPLIANCE

Manufacturer: Eaton Corporation
Model Line: 9X55 8-15 kVA Nomenclature

TABLE 4

Digit	Item	Description	UUT
1	Model Line	K = 9X55	1, 2, 16, 17
2	Base Model	4 = 9155 (8-15 kVA)	16
		A = 9355 (10-15 kVA)	1, 2, 17
3-4	kVA Rating	08 = 8 kVA	
		10 = 10 kVA	
		12 = 12 kVA	16
		15 = 15 kVA	1, 2, 17
5	System Type	1 = Reverse Transfer (not critical to seismic, programming)	1, 2, 16, 17
		2 = Parallel (not critical to seismic, programming)	
		A = Reverse Transfer, FAA (not critical to seismic, programming)	
6	Battery Configuration	1 = 1 Battery Module	1, 16
		2 = 2 Battery Modules	17
		3 = 1 Battery Module + Transformer Module	2
		4 = 1 Battery Module w/o Batteries	
		5 = 2 Battery Modules w/o Batteries	
		6 = 1 Battery Module w/o Batteries + Transformer Module	
7	Voltage Configuration	0 = N/A (only 9155)	16
		1 = 120/208V in/out, 50/60 Hz Autodetect (only 9355)	1
		2 = 127/220V in/out, 50/60 Hz Autodetect (only 9355)	
		4 = 480V in, 120/208V out (only 9355)	2, 17
		~~6 = 600V in, 120/208V out (only 9355)~~	
8	Communications Options	0 = None	1, 2, 16, 17
		~~3 = ConnectUPS WE/SNMP with EMP~~	
		~~4 = Modbus Communications Card~~	
		~~5 = Standard Relay Interface Card~~	
		~~6 = Industrial Relay Interface Card~~	
		~~7 = Internal Modem Card~~	
9-12	Power Distribution	0-4, A-N, P, S, X - Plug Configurations (not critical to seismic)	1, 2, 16, 17
13	Unused	0 = None	1, 2, 16, 17
14	Start-up Options	1-4 - Warranty and Service Options (not critical to seismic)	1, 2, 16, 17
15	Unused	0 = None	1, 2, 16, 17

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SPECIAL SEISMIC CERTIFICATION
PRODUCT NOMENCLATURE

2200643-CR-001-R0

Manufacturer: Eaton Corporation
Model Line: 9X55 20-30 kVA Nomenclature

TABLE 5

Digit	Item	Description	UUT
1	Model Line	K = 9X55	4
2	Base Model	B = 9355 (20-30 kVA)	4
3-4	kVA Rating	20 = 20 kVA	4
		30 = 30 kVA	
5	System Type	1 = Reverse Transfer (not critical to seismic, programming)	4
		2 = Parallel (not critical to seismic, programming)	
		3 = Reverse Transfer + Output Breaker	
		4 = Parallel + Output Breaker	
		A = Reverse Transfer, FAA (not critical to seismic, programming)	
6	Battery Configuration	0 = No Internal Battery	
		3 = 3X Battery Shelves w/ Batteries	4
		4 = 3x Battery Shelves w/o Batteries	
7	Voltage Configuration	1 = 120/208V in/out, 50/60 Hz Autodetect	4
		2 = 127/220V in/out, 50/60 Hz Autodetect	
8	Communications Options	0 = None	4
		~~3 = ConnectUPS WE/SNMP with EMP~~	
		~~4 = Modbus Communications Card~~	
		~~5 = Standard Relay Interface Card~~	
		~~6 = Industrial Relay Interface Card~~	
		~~7 = Internal Modem Card~~	
9	Protection	0 = Bypass Fuses	4
		1 = No Bypass Fuses	
10-13	Unused	0 = None	4
14	Start-up Options	1-4 - Warranty and Service Options (not critical to seismic)	4
15	Unused	0 = None	4

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SPECIAL SEISMIC CERTIFICATION
CERTIFIED SUBCOMPONENT MATRIX

2200643-CR-001-R0

Manufacturer: Eaton Corporation
Model Line: 9X55 UPS and Accessories
Table Description: Frames

TABLE 6

Building Code: CBC 2022
Seismic Certification Limits: S_{DS} = 1.85 g z/h = 1.0; S_{DS} = 2.96 g z/h = 0.0; I_P = 1.5

Model Line (Manufacturer)	Model	Dimension (in)			Weight (lb)	Material	Notes	UUT
		Depth	Width	Height				
9X55 Frame (Eaton)	8-15 kVA (2-HIGH)	33.7	12.0	32.2	86	16 GA CRS		1, 6
	8-15 kVA (3-HIGH)	33.7	12.0	47.8	122	16 GA CRS		2, 3, 17
	20-30 kVA	34.1	20.0	67.0	245	16 GA CRS		4, 5
9X55 Seismic Kit (Eaton)	103004194-5501					CRS	*8-15 kVA*	1-3, 16, 17
	103004896					CRS	*20-30 kVA*	4, 5

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SPECIAL SEISMIC CERTIFICATION
CERTIFIED SUBCOMPONENT MATRIX

2200643-CR-001-R0

Manufacturer: Eaton Corporation
Model Line: 9X55 UPS and Accessories
Table Description: Electrical Components

TABLE 7

Building Code: CBC 2022
Seismic Certification Limits: S_{DS} = 1.85 g z/h = 1.0; S_{DS} = 2.96 g z/h = 0.0; I_P = 1.5

Component Type	Manufacturer	Model	Description	Notes	UUT
Electronics Module	Eaton	1024064	9155 module, 15 kVA and under		16
		744-A0421	9355 module, 15 kVA and under		1, 2, 17
Battery	CSB	PWHR1234W2FR	12V, 34 WATT (9 AH), VRLA		1-4, 16, 17
Static Switch	Eaton	103004889	30 kVA		4
Contractor	Eaton	E111D85X3N	Output contactor, 115A		4
		E111D10X3N	Bypass and input contactor, 130A		1,2,4,16,17
Transformer	Eaton	V29M28E35M-50C	35 kVA, 208/208 (Al)		5
	Trafotek	149502093	600-208/208 (Cu)		2
Breaker	Airpax	209-2-34218-1-V	1A, 2 Pole		Extrap.
		209-3-34218-2-V	2A, 2 Pole		2
		229-2-IREC5-33735-100	100A, 2 Pole		1,2,16,17
	Eaton (E-Frame)	EGS3070FFG	70A, 3 Pole, Thermal Trip		Extrap.
		EGK3125KSG	125A, 3 Pole, Thermal Trip		Extrap.
		EGS3125FFG	125A, 3 Pole, Thermal Trip		4
	Eaton (F-Frame)	HFDDC3150LA1301U3801	150A, 3 Pole		Interp.
		FD2200S18	200A, 2 Pole, Shunt Trip		4
		FD3225KLA06	225A, 3 Pole		Extrap.
	Eaton (G-Frame)	GHC3020	20A, 3 Pole		4
		GHC3030	30A, 3 Pole		Interp.
		GHC3060	60A, 3 Pole		Interp.
Power Module	Eaton	103004894	30 kVA power module		4
		103004889	30 kVA power module/static switch		4

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UNIT UNDER TEST (UUT) SUMMARY SHEET

2200643-CR-001-R0

Manufacturer: Eaton Corporation

Model Line: 9X55 UPS and Accessories

UUT	Unit Description	Report Number	Testing Lab	Year Tested	ISO 17025 Accredited?	S_{DS}	z/h	I_P
1	KA1511100000010	55906R08-9 (EUT27)	Wyle Lab (NTS - Hunstville)	2008	Yes	1.85 2.96	1.0 0.0	1.5
2	KA15134000000010	55906R08-13 (EUT21)	Wyle Lab (NTS - Hunstville)	2008	Yes	1.93 3.09	1.0 0.0	1.5
3	103004193-5501	55906R08-12 (EUT19)	Wyle Lab (NTS - Hunstville)	2008	Yes	2.03 3.25	1.0 0.0	1.5
4	KB3013100000010	55906R08-9 (EUT13)	Wyle Lab (NTS - Hunstville)	2008	Yes	1.85 2.96	1.0 0.0	1.5
5	KBT001100000010	55906R08-8 (EUT5)	Wyle Lab (NTS - Hunstville)	2008	Yes	2.03 3.25	1.0 0.0	1.5
16	G410110000	70961R13 (UUT6)	Wyle Lab (NTS - Hunstville)	2013	Yes	2.73 4.37	1.0 0.0	1.5
17	103006185	70961R13 (UUT7)	Wyle Lab (NTS - Hunstville)	2013	Yes	2.73 4.37	1.0 0.0	1.5

Notes:

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UNIT UNDER TEST (UUT) SUMMARY SHEET

2200643-CR-001-R0

UUT 1

Manufacturer: Eaton Corporation
Model Line: 9X55 UPS and Accessories
Model Number: KA1511100000010 ***Serial Number:*** FB336JBA45

Product Construction Summary:
Formed carbon steel internal framing with carbon steel panelized walls, base and roof.

Options/Subcomponent Summary:
Frames: Eaton (8-15 kVA (2-HIGH)); **Seismic Kit:** Eaton (103004194-5501); **Electric Module:** Eaton (744-A0421);
Battery: CBS (PWHR1234W2FR); **Contactor:** Eaton (E111D10X3N); **Breaker:** Airpax (229-2-IREC5-33735-100)

UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
480	32.0	18.0	34.0	27.0	15.0	>33.3

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2022	ICC-ES AC156	1.85	1.0	1.5	2.96	2.22	1.97	0.79
		2.96	0.0					

Test Mounting Details: *(Test Report: 55906R08-9 (EUT27))*

UUT1 was base mounted - rigid using twelve (12) Class 8.8 M10 bolts torqued to 31 ft-lbs. and washers.
Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.
Contents were included in testing per operating conditions.

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UNIT UNDER TEST (UUT) SUMMARY SHEET

2200643-CR-001-R0

UUT 2

Manufacturer: Eaton Corporation
Model Line: 9X55 UPS and Accessories
Model Number: KA15134000000010 ***Serial Number:*** FB336JBA37

Product Construction Summary:
Formed carbon steel internal framing with carbon steel panelized walls, base and roof.

Options/Subcomponent Summary:
Frames: Eaton (8-15 kVA (3-HIGH)); **Seismic Kit:** Eaton (103004194-5501); **Electronics Module:** Eaton (744-A0421);
Battery: CBS (PWHR1234W2FR); **Contactor:** Eaton (E111D10X3N); **Transformer:** Trafotek (149502093);
Breaker: Airpax (209-3-34218-2-V, 229-2-IREC5-33735-100)

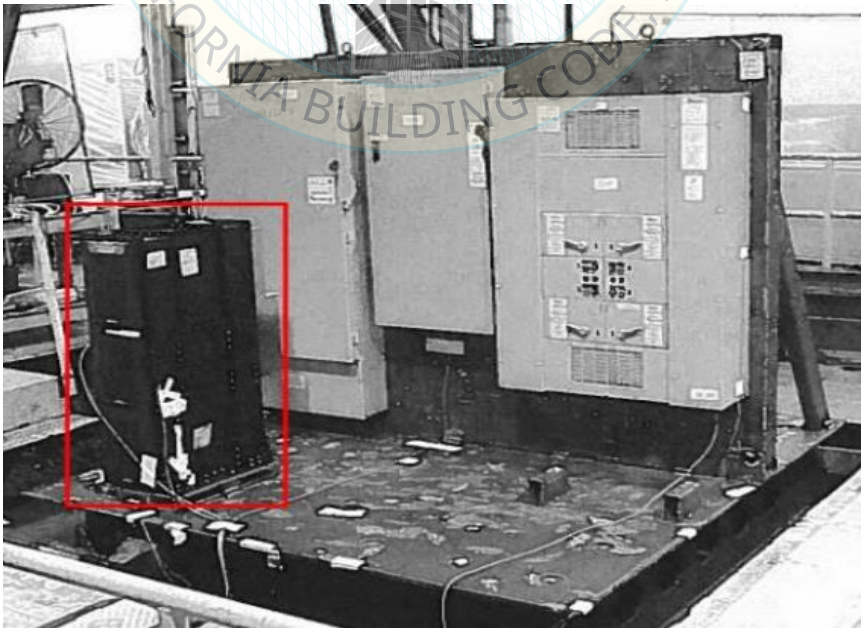
UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
755	32.5	14.5	49.5	17.0	8.8	>33.3

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2022	ICC-ES AC156	1.93	1.0	1.5	1.93	2.32	2.06	0.82
		3.09	0.0					

Test Mounting Details: *(Test Report: 55906R08-13 (EUT21))*



UUT2 was base mounted - rigid using twelve (12) Class 8.8 M10 Bolts torqued to 31 ft-lbs. and washers.
Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.
Contents were included in testing per operating conditions.

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UNIT UNDER TEST (UUT) SUMMARY SHEET

2200643-CR-001-R0

UUT 3

Manufacturer: Eaton Corporation
Model Line: 9X55 UPS and Accessories
Model Number: 103004193-5501 ***Serial Number:*** N/A

Product Construction Summary:
Formed carbon steel internal framing with carbon steel panelized walls, base and roof.

Options/Subcomponent Summary:
Frames: Eaton (8-15 kVA (3-HIGH)); **Seismic Kit:** Eaton (103004194-5501); **Battery:** CBS (PWHR1234W2FR);

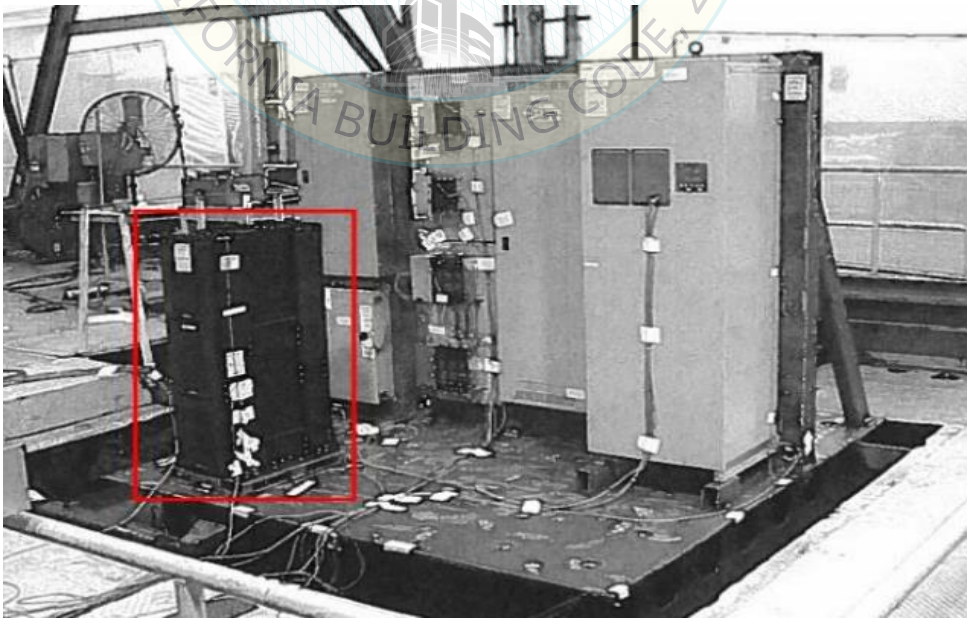
UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
855	28.5	14.5	50.0	17.0	6.0	>33.3

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2022	ICC-ES AC156	2.03	1.0	1.5	3.25	2.44	2.06	0.82
		3.25	0.0					

Test Mounting Details: *(Test Report: 55906R08-12 (EUT19))*



UUT3 was base mounted - rigid using twelve (12) Class 8.8 M10 Bolts torqued to 31 ft-lbs. and washers.
Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.
Contents were included in testing per operating conditions.

REVIEWED FOR CODE COMPLIANCE
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OSP-0486
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CALIFORNIA BUILDING CODE 2019

UNIT UNDER TEST (UUT) SUMMARY SHEET

2200643-CR-001-R0

UUT 4

Manufacturer: Eaton Corporation
Model Line: 9X55 UPS and Accessories
Model Number: KB3013100000010 ***Serial Number:*** N/A

Product Construction Summary:
Formed carbon steel internal framing with carbon steel panelized walls, base and roof.

Options/Subcomponent Summary:
Frame: Eaton (20-30 kVA); **Seismic Kit:** Eaton (103004896); **Battery:** CSB (PWHR1234W2FR);
Static Swith: Eaton (103004889); **Contactor:** Eaton (E111D85X3N, E111D10X3N);
Breaker: Eaton (E-Frame, EGS3125FFG) (F-Frame, FD2200S18) (G-Frame, GHC3020);
Power Module: Eaton (103004894, 103004889)

UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
1,155	44.0	24.0	65.0	6.4	6.4	>33.3

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2022	ICC-ES AC156	1.85	1.0	1.5	2.96	2.22	1.97	0.79
		2.96	0.0					

Test Mounting Details: *(Test Report: 55906R08-9 (EUT13))*

UUT4 was base mounted - rigid using ten (10) Class 8.8 M10 bolts torqued to 31 ft-lbs. and washers.
Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.
Contents were included in testing per operating conditions.

REVIEWED FOR CODE COMPLIANCE
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CALIFORNIA BUILDING CODE, 2019

UNIT UNDER TEST (UUT) SUMMARY SHEET

2200643-CR-001-R0

UUT 5

Manufacturer: Eaton Corporation
Model Line: 9X55 UPS and Accessories
Model Number: KBT001100000010 ***Serial Number:*** N/A

Product Construction Summary:
Formed carbon steel internal framing with carbon steel panelized walls, base and roof.

Options/Subcomponent Summary:
Frame: Eaton (20-30 kVA); **Seismic Kit:** Eaton (103004896); **Transformer:** Eaton (V29M28E35M-50C)

UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
490	44.0	24.0	66.0	7.5	7.2	>33.3

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2022	ICC-ES AC156	2.03	1.0	1.5	3.25	2.44	2.06	0.82
		3.25	0.0					

Test Mounting Details: *(Test Report: 55906R08-8 (EUT5))*

UUT5 was base mounted - rigid using ten (10) Class 8.8 M10 bolts torqued to 31 ft-lbs. and washers.
Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.
Contents were included in testing per operating conditions.

REVIEWED FOR CODE COMPLIANCE
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CALIFORNIA BUILDING CODE, 2019

UNIT UNDER TEST (UUT) SUMMARY SHEET

2200643-CR-001-R0

UUT 16

Manufacturer: Eaton Corporation
Model Line: 9X55 UPS and Accessories
Model Number: G410110000 ***Serial Number:*** BG095FBB06

Product Construction Summary:
Formed carbon steel internal framing with carbon steel panelized walls, base and roof.

Options/Subcomponent Summary:
Frame: Eaton (8-15 kVA (2-HIGH)); **Seismic Kit:** Eaton (103004914-5501); **Electronics Module:** Eaton (1024064);
Battery: CSB (PWHR1234W2FR); **Contactor:** Eaton (E111D10X3N); **Breaker:** Airpax (229-2-IREC5-33735-100)

UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
452	32.0	18.0	34.0	>33.3	24.0	>33.3

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2022	ICC-ES AC156	2.73	1.0	1.5	4.37	3.28	2.91	1.17
		4.37	0.0					

Test Mounting Details: *(Test Report: 70961R13 (UUT6))*

UUT16 was base mounted - rigid using twelve (12) Class 8.8 M10 bolts torqued to 31 ft-lbs. and washers.
Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.
Contents were included in testing per operating conditions.

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DATE: 11/22/2022
CALIFORNIA BUILDING CODE 2022

UNIT UNDER TEST (UUT) SUMMARY SHEET

2200643-CR-001-R0

UUT 17

Manufacturer: Eaton Corporation
Model Line: 9X55 UPS and Accessories
Model Number: 103006185 ***Serial Number:*** BG111JBA01

Product Construction Summary:
Formed carbon steel internal framing with carbon steel panelized walls, base and roof.

Options/Subcomponent Summary:
Frame: Eaton (8-15 kVA (3-HIGH)); **Seismic Kit:** Eaton (103004914-5501); **Electronics Module:** Eaton (744-A0421);
Battery: CSB (PWHR1234W2FR); **Contactor:** Eaton (E111D10X3N); **Breaker:** Airpax (229-2-IREC5-33735-100)

UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
750	32.0	18.0	49.5	18.0	12.0	>33.3

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2022	ICC-ES AC156	2.73	1.0	1.5	4.37	3.28	2.91	1.17
		4.37	0.0					

Test Mounting Details: *(Test Report: 70961R13 (UUT7))*

UUT17 was base mounted - rigid using twelve (12) Class 8.8 M10 bolts torqued to 31 ft-lbs. and washers.
Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.
Contents were included in testing per operating conditions.

REVIEWED FOR CODE COMPLIANCE
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DATE: 11/22/2022
CALIFORNIA BUILDING CODE 2022