

DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION FACILITIES DEVELOPMENT DIVISION

APPLICATION FOR HCAI SPECIAL SEISMIC	OFFICE USE ONLY
CERTIFICATION PREAPPROVAL (OSP)	APPLICATION #: OSP-0556
HCAI Special Seismic Certification Preapproval (OSP)	
Type: New X Renewal	
Manufacturer Information	
Manufacturer: Vertiv Corporation	
Manufacturer's Technical Representative: Julian Freeman	
Mailing Address: 975 Pittsburgh Drive, Delaware, OH 43015	
Telephone: (740) 833-8910 Email: julian.freeman@	vertiv.com
Product Information	10.
Product Name: UPS and Batteries	E.
Product Type: UPS	2
Product Model Number: EXM UPS with Various Cabinets - See Attachment	s- m
General Description: 208V & 480V UPS System. 10-250 kVA.ad Karin	
Mounting Description: Rigid, Floor Mounted	
Tested Seismic Enhancements: Seismic enhancements made to the test anomalies during the tests shall be incor	units and/or modifications required to address porated into the production units.
Applicant Information	
	D'
Applicant Company Name: TRU Compliance, by Structural Integrity Associa	tes
Contact Person: Daniel Zentner	
Mailing Address: 233 SW Wilson Ave, Suite 101, BEND, OR 97702	
Telephone: (541) 292-5839 Email: dzentner@struction	nt.com
Title: Program Manager	

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





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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 X ICC-ES AC156 IEEE 344 IEEE 693 NEBS 3
Other (Please Specify):
FOR CODE CO.
Testing Laboratory
Company Name: UNIVERSITY OF CALIFORNIA, BERKELEY (PEER)
Contact Person: Amarnath Kasalanati
Mailing Address: 1301 South 46th Street, Blvd 420, Richmond CA 94804
Telephone: (510) 642-6475 By Email: peer_center@berkeley.edu
Company Name: QUALTECH/CURTISS WRIGHT/TRENTEC
Contact Person: Jerry Newberry
Mailing Address: 4600 East Tech Drive, Cincinnati OH 45245
Telephone: (513) 528-7900 Email: jnewberry@curtisswright.com
BUILDING





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Seismic Parameters

Desig	n Basis of Equipment or Components	(Fp/Wp) = 1.45		
	SDS (Design spectral response accele	eration at short period, g) = 1.93		
	ap (Amplification factor) =	2.5		
	Rp (Response modification factor) =	6.0		
	Ω_0 (System overstrength factor) =	2.0		
	Ip (Importance factor) =	1.5		
	z/h (Height ratio factor) =	1 and 0		
	Natural frequencies (Hz) =	See Attachment		
	Overall dimensions and weight =	See Attachment ODE	-	
HCA	Approval (For Office Use Only)	Approval Expires on 08/12/2028	The	
Date:	8/12/2022	OSP-0556	G	
Name	e: Mohammad Karim		Title:	Supervisor, Health Facilities
Speci	al Seismic Certification Valid Up to: St	ps (g) = 1.93	z/h =	See Above
Condi	tion of Approval (if applicable):	DATE: 08/12/2022	6	
		PRIVIA BUILDING COD	1025	

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TRU COMPLIANCE

Manufacturer:	Vertiv Corporation					TAB	LE 1
Model Line:	EXM UPS						
<i>Certified Product Con</i> Carbon steel housing, 1		or 1992 ci	do papolo				
carbon steet nousing, 1	loga. Teal pallet allu uu	ior, toga. si	ue pariets.				
Certified Options Sum	marin						
See tables 2 - 8 for a co	•	nal compor	ents.				
Mounting Configuration	on:)E a			
Base mounted - rigid		FOR		L (O)	1.		
Note: Installed mounting cor	nfiguration must be of simila	r configuratio	n and equiva	lent strength	and stiffness	to those tested.	
Ruilding Code: CPC 20		Soismis	ortificati	on Limits:	S _{DS} =	1.93 g z/h=1.0	<i>I</i> _P = <i>1.5</i>
Building Code: CBC 20	S.			XXXXXXXXXXX	S _{DS} ≠	1.93 g z/h=0.0	·p- 1.3
Model Line	Model	Diı	nensions	(in)6	Weight	Notes	υυτ
Model Elle	Model	Depth	Width	Height	(lb)	Notes	
208V EXM UPS	10- <mark>40 kVA</mark>	BY39 _{Mo}	har <mark>24</mark> ma	d Karin	1790	0	5
	10-1 <mark>00 kVA</mark>	39	24	79	1753		Interp.
	10-2 <mark>00 kVA</mark>	39	35/1	/27922	1753	UUT3: standalone	2, 3
480V EXM UPS	30 -20 <mark>0 kVA</mark>	39 -	24	79	1030		Interp.
	30-250 kVA	39	33	79	1356	UUT4: standalone	1,4
	320MM	39	13	79	1102		6
208V Battery Cabinets	600MM	39	24	79	2477		Interp.
	880MM	39	35	79	3341		2
480V Battery Cabinets	880MM	39	J_{35}	79	2962		Interp.
loov Buttery cubinets	1200MM	39	47	79	4943		1
208V Transformer Cabinet	600MM	39	24	79	2043		2
208V Paralleling	300MM	39	12	79	263		2
Cabinet	600MM	39	24	79	594		Interp.
	800MM	39	32	79	714		2
480V Maintenance	200MM	39	8	79	195		Extrap
Bypass Cabinets	300MM	39	12	79	288		Extrap
	600MM	39	24	79	887		1
	200MM	39	8	79	241		5
208V Maintenance	300MM	39	12	79	288		Interp.
Bypass Cabinets	600MM	39	24	79	687		Interp
	800MM	39	32	79	728		6
208V Bypass	600MM	39	24	79		w/225A panelboard	2
Distribution Cabinet	600MM	39	24	79		w/400A panelboard	2
Wiring Cabinet	200MM	39	8	79	132		2

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Manufacturer: Model Line:	Vertiv Corporation EXM UPS	Table Description: Bypass Modules			TABLE 2
Building Code: CBC 2022		Seismic Certificat	ion Limits: $S_{DS} = 1.93 g z/h = 1.0$ $S_{DS} = 1.93 g z/h = 0.0$	/ _P = 1.5	
Component Type	Manufacturer	Model	R CODE Description	Note	s UUT
		2359337	Used on 208V 40kVA UPS		5
		2359336	Used on 208V 100kVA UPS		Interp
Bypass Modules	Vertiv	2359717	Used on 208V 200kVA UPS (1/2 bypass kit)		2,3
		2 <mark>359344</mark>	Used on 208V 200kVA UPS (1/2 bypass kit)		2,3
		0235007L	Used on 480V 50-200kVA & 50- <mark>250kV</mark> A UPS		1,4
		BY	Aphammad Karim		
			: 08/12/2022		
		DAT	E. 00/12/2022		
		A.V.			
			UILDING		

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<i>Manufacturer: Model Line:</i>	Vertiv Corporation EXM UPS	Table Description: Power Modules			TABLE 3
Building Code: CBC 2022		Seismic Certification Limits: $S_{DS} = 1.93 g z/h = 1.0$ $S_{DS} = 1.93 g z/h = 0.0$		/ _P = 1.5	
Component Type	Manufacturer	Model	R CODE Description	Not	es UUT
Power Modules	Vertiv	2359335 023500LB	208V UPS Power Module 480V UPS Power Module		2,3,5 1,4
		A A A A A A A A A A A A A A A A A A A	OSP-0556		
		O BY:N	Aphammad Karim		
		G DAT	E: 08/12/2022		
		R			
		VA	UILDING		

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Manufacturer: Model Line:	Vertiv Corporation EXM UPS	Table Description: Batteries			TABLE 4
Building Code: CBC 2022		Seismic Certification Limits: $S_{DS} = 1.93 g z/h = 1.0$ $S_{DS} = 1.93 g z/h = 0.0$		l _P = 1.5	
Component Type	Manufacturer	Model FC	CODE Description	No	tes UUT
		12HX100	12 V, 21Ah, 22 lbs.		Extrap.
		12HX150E	12 V, 32Ah, 32 lbs.		6
		12HX205	12 V, 44Ah, 43 lbs.		5
		12HX300	12 V, 70 Ah,60 lbs.		Interp.
		12HX330	12 V, 82 Ah, 71 lbs.		Interp.
		12HX400 BY • M	12 V, 94 Ah, 80 lbs.		Interp.
		12HX505	12 V, 119 Ah, 103 lbs.		Interp.
	EnerSys DataSafe	12HX540	12 V, 123 Ah, 106 lbs.		2, 3
		12HX150-FR	12 V, 32 Ah, 32 lbs.		Interp.
		12HX205-FR	12 V, 44 Ah, 43 lbs.		6
Battteries		12HX300-FR	12 V, 70 Ah,60 lbs.		Interp.
(Lead Acid)		12HX330-FR	12 V, 82 Ah, 71 lbs.		Interp.
		12HX400-FR	12 V, 94 Ah, 80 lbs.		Interp.
		12HX505-FR	12 V, 119 Ah, 103 lbs.		Interp.
		12HX540-FR	12 V, 123 Ah, 106 lbs.		2
		HR1500	12 V, 29.6Ah, 27 lbs.		6
		HR2000	12 V, 48.8Ah, 40 lbs.		Interp.
		HR3000	12 V, 74.4 Ah, 61 lbs.		Interp.
	Deka-Unigy	HR3500	12 V, 89.1 Ah, 66 lbs.		Interp.
		HR4000	12 V, 94 Ah, 74 lbs.		Interp.
		HR5000	12 V, 134 Ah, 98 lbs.		Interp.
		HR5500	12 V, 149 Ah, 107 lbs.		2, 3

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Vertiv Corporation EXM UPS	XM UPS		TABLE 4	
2022	Seismic Certification Limits: $S_{DS} = 1.93 g z/h = 1.0$ $S_{DS} = 1.93 g z/h = 0.0$	= 1.5		
Manufacturer	Model FOR CODE Description	Notes	UUT	
	UPS12-150MR 12 V, 34.6 Ah, 27.3 lbs.		1	
	UPS12-210MR 12 V, 53.8 Ah, 40 lbs.		Interp	
	UPS12-300MR 12 V, 78.6 Ah, 58.4 lbs.		Interp	
C&D Technologies	UPS12-350MR 12 V, 93.2 Ah, 67.4 lbs.		Interp	
	UPS12-400MR 12 V, 102 Ah, 76 lbs.		Interp	
	UPS12-490MR V 12 V, 139 Ab, 100 bs.		Interp	
	UPS12-540MR 12 V, 149 Ah, 100 lbs.		2,3	
	PATE: 08/12/2022			
	EXM UPS 2022 Manufacturer	Seismic Certification Limits: $S_{DS} = 1.93 g z/h = 1.0$ $S_{DS} = 1.93 g z/h = 0.0$ I_P Manufacturer Model Description I_P UPS12-150MR 12 V, 34.6 Ah, 27.3 lbs. UPS12-210MR 12 V, 53.8 Ah, 40 lbs. UPS12-300MR UPS12-300MR UPS12-300MR UPS12-300MR 12 V, 78.6 Ah, 58.4 lbs. UPS12-300MR UPS12-400MR UPS12-40	Seismic Certification Limits: $S_{DS} = 1.93 g \ z/h = 1.0 \ S_{DS} = 1.93 g \ z/h = 0.0$ $I_p = 1.5$ Manufacturer Model Description Notes UPS12-150MR 12 V, 34.6 Ah, 27.3 lbs. UPS12-210MR 12 V, 53.8 Ah, 40 lbs. UPS12-210MR 12 V, 78.6 Ah, 58.4 lbs. UPS12-300MR UPS12-300MR C&D Technologies UPS12-350MR 12 V, 93.2 Ah, 67.4 lbs. UPS12-400MR UPS12-490MR 12 V, 102 Ah, 76 lbs. UPS12-490MR 12 V, 139 Ah, 100 lbs. UPS12-540MR 12 V, 149 Ah, 100 lbs. UPS12-540MR 12 V, 149 Ah, 100 lbs.	

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Manufacturer: Model Line:	Vertiv Corporation EXM UPS	Table Description: Panelboards					TABLE 5
Building Code: CBC 2022		Seismic Certification Limits: $S_{DS} = 1.93 g z/h = 1.0$ $S_{DS} = 1.93 g z/h = 0.0$		l _P = 1.5			
Component Type	Manufacturer	Model	R CODE Description	Not	es UUT		
225A Panelboard	Square-D	NQM354L2CS	600MM BDC, 208V, 10-40kVA, 625 lbs.		2		
400A Panelboard	Square-D	NQM354L4CS	600MM BDC, 208V, 60-100kVA, 660 lbs.		2		
			Ward Ward and Word and William 2				
		2	OSP-0556				
		O BY:N	1phammad Karim				
		DAT	: 08/12/2022 Jo				
		Z					
		TATA					
			UTI DING				

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<i>Manufacturer: Model Line:</i>	Vertiv Corporation EXM UPS		Table Description: Circuit Breakers		TABLE 6
Building Code: CBC 2022		Seismic Certificat	ion Limits: $S_{DS} = 1.93 g z/h = 1.0$ $S_{DS} = 1.93 g z/h = 0.0$	I _P = 1.5	-
Component Type	Manufacturer	Model	R CODE Description	No	otes UUT
		T3N225TWBAS2	208V, 225AF/225AT	DC	2
		T6N600TWAS2	208V, 600AF/465AT	DC	1
		T2S040TW	208V, 100AF/40AT		2
		T2S050TW	208V, 100AF/45AT		Interp.
		T3S060TW	208V, 225AF/60AT		Interp.
		T3S070TWRV·N	208V, 225AF/70AT		Interp.
		T3S080TW	208V, 225AF/80AT		Interp.
		T3S090TW	208V, 225AF/90AT		Interp.
		T3S110TW	208V, 225AF/110AT		Interp.
		TS125TW	208V, 225AF/125AT		Interp.
		T3S150TW	208V, 225AF/150AT		Interp.
Circuit Breakers	ABB	T3N225TW	208V, 225AF/225AT		Interp.
		T3S175TW	208V, 225AF/175AT		Interp.
		T5N300TW	208V, 400AF/225AT		Interp.
		T5N400TW	208V, 400AF/350AT		Interp.
		609130P2	208V, 600AF/300AT		Interp.
		604283P2	208V, 600AF/400AT		Interp.
		546923P1	208V, 600AF/600AT		Interp.
		T5N600BW	208V, 600AF/600AT		Interp.
		T6N800TW	208V, 800AF/800AT		1
		T7S1000BW	208V, 1000AF/1000AT		1
		XT1SU3040AFF000XXX	208V, 100AF/40AT		2
		XT1SU3050AFF000XXX	208V, 100AF/50AT		Interp.

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<i>Manufacturer: Model Line:</i>	Vertiv Corporation EXM UPS		Table Description: Circuit Breakers		TABLE 6
Building Code: CBC 2022		Seismic Certification Limits: S _{DS} = 1.93 g z/h = 1.0 S _{DS} = 1.93 g z/h = 0.0		<i>I_P</i> = 1.5	
Component Type	Manufacturer	Model	R CODE Description	No	tes UUT
		XT3SU3060AFF000XXX	208V, 225AF/60AT		Interp.
		XT3SU3070AFF000XXX	208V, 225AF/70AT		Interp.
		XT3SU3090AFF000XXX	208V, 225AF/90AT		Interp.
	ABB	XT3SU3110AFF000XXX	208V, 225AF/110AT		Interp.
		XT3SU3150AFF000XXX	208V, 225AF/150AT		Interp.
		XT3SU3175AFF000XXX	208V, 225AF/175AT		Interp.
		XT4NU3225AFF000XXX	208V, 225AF/225AT		1
		HJF36150U33XYE	480V, 150AF/150AT	LSI Trip Unit	2
		JJF <mark>3625</mark> 0U33XYE	480V, 250AF/250AT	LSI Trip Unit	Interp.
		LJF36400TU33XTW	480V, 400AF/350AT	LSI Trip Unit	Interp.
		LJF36500TU33XTW	480V, 400AF/300AT	LSI Trip Unit	Interp.
Circuit Breakers		LJF36600TU33XTW	480V, 600AF/450AT	LSI Trip Unit	Interp.
		LGF36400RU33XAE	208V, 600AF/400AT	LSI Trip Unit	Interp.
		LGF36600TU33X	208V, 600AF/600AT	LSI Trip Unit	Interp.
	Caucaro D	PGF36120U33AYE	208V, 1200AF/1200AT	LSI Trip Unit	1
	Square D	HGF36040YE	208V, 150AF/40AT		2
		HGF36060YE	208V, 150AF/60AT		Interp.
		HGF36070YE	208V, 150AF/70AT		Interp.
		HGF36150YE	208V, 150AF/150AT		Interp.
		HJF36050YE	480V, 150AF/50AT		Interp.
		HJF36060TYE	480V, 150AF/60AT		Interp.
		HJF36070TYE	480V, 150AF/70AT		Interp.
		HJF36080YE	480V, 150AF/80AT		Interp.

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<i>Manufacturer: Model Line:</i>	Vertiv Corporation EXM UPS	Table Description: Circuit Breakers	TABLE 6		
Building Code: CBC 2	2022	Seismic Certification Limits: $S_{DS} = 1.93 g$ $z/h = 1.0$ $I_P = 1.5$ $S_{DS} = 1.93 g$ $z/h = 0.0$ $I_P = 1.5$			
Component Type	Manufacturer	Model FOR CODE Description	Notes UUT		
		HJF36090YE 480V, 150AF/90AT	Interp.		
		HJF36110YE 480V, 150AF/110AT	Interp.		
		HJF36125YE 480V, 150AF/125AT	Interp.		
		HJF36150YE 480V, 150AF/150AT C	Interp.		
		JJF36175TYE 480V, 250AF/175AT	Interp.		
	Caucaro D	JJF36200TYE V· 480V, 250AF/200AT	Interp.		
Circuit Breakers	Square D	JJF36225YE 480V, 250AF/225AT	Interp.		
		LLF37030D88 480V, 600AF/300AT	Interp.		
		LLF37040D88 480V, 600AF/400AT	Interp.		
		LLF37045D88 480V, 600AF/450AT	Interp.		
		LLF37050D88 480V, 600AF/500AT	Interp.		
		LLF37060D88 480V, 600AF/600AT	1		
	Siemens	HFK3B225MA2REX6 208V, 225A	5		
		UILDING			

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<i>Manufacturer: Model Line:</i>	Vertiv Corporation EXM UPS		Table Description: Transformers						
Building Code: CBC 2	2022	Seismic Certificati	on Limits: $S_{DS} = 1.93 g z/h = 1.0$ $S_{DS} = 1.93 g z/h = 0.0$	/ _P = 1.5					
Component Type	Manufacturer	Model FO	CODE Description	Not	es	UUT			
		02-818064-10	015K 220-208Y//208-220Y K1, 199 lbs.			Extrap.			
		02-818054-10	015K 480//220-208Y K1, 205 lbs.			Extrap.			
		02-818055-10	015K 600//220-208Y K1, 203 lbs.			Extrap.			
		02-818064-00	02-818064-00 020K 220-208Y//208-220Y K1, 238 lbs.			Extrap.			
		0 <mark>2-818</mark> 054-00	020K 480//220-208Y K1, 232 lbs.			Extrap.			
		02-818055-0 <mark>03 V • M</mark>	020K 600//220-208Y K1, 232 lbs.			Extrap.			
	02-818063-10		025K 220-208Y//208-220Y K1, 264 lbs.		Extrap.				
		02-818053-10	025K 480//220-208Y K1, 260 lbs.			Extrap.			
		02 <mark>-818</mark> 056-10	025K 600//220-208Y K1, 252 lbs.			Extrap.			
		02-818009-00	030K 208-220//480 K1, 192 lbs.			Extrap.			
		02-818063-00 045K 220-208Y//208-220Y K1, 415 lbs.				Extrap.			
Transformers	Vertiv	02-818053-00	045K 480//220-208Y K1, 425 lbs.	− Material: Cu Winding − Coi		Extrap.			
		02-818056-00	045K 600//220-208Y K1, 424 lbs.		e	Extrap.			
		02-818062-00	050K 220-208Y//208-220Y K1, 425 lbs.			Extrap.			
		02-818052-00	050K 480//220-208Y K1, 424 lbs.			Extrap.			
		02-818057-00	050K 600//220-208Y K1, 422 lbs.			Extrap.			
		02-818061-00	075K 220-208Y//208-220Y K1, 570 lbs.			Extrap.			
		02-818051-00	075K 480//220-208Y K1, 570 lbs.			Extrap.			
		02-818058-00	075K 600//220-208Y K1, 570 lbs.			Extrap.			
		02-818060-10	100K 220-208Y//208-220 K1, 694 lbs.			Extrap.			
		02-818050-10	100K 480//220-208Y K1, 680 lbs.			Extrap.			
		02-818059-10	100K 600//220-208Y K1, 686 lbs.			Extrap.			
		02-818060-00	125K 220-208Y//208-220 K1, 850 lbs.			2			

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Manufacturer: Model Line:	Vertiv Corporation EXM UPS		Table Description: Transformers		TABLE	7
Building Code: CBC 2	VertiveEXM UPSSeismic Certification Limits: $S_{DS} = 1.93 g$ $S_{DS} = 1.93 g$ $Z/h = 0.0$ $I_P = 1.5$ Seismic Certification Limits: $S_{DS} = 1.93 g$ $Z/h = 0.0$ $I_P = 1.5$ Seismic Certification Limits: $S_{DS} = 1.93 g$ $Z/h = 0.0$ $I_P = 1.5$ Seismic Certification Limits: $S_{DS} = 1.93 g$ $Z/h = 0.0$ $I_P = 1.5$ Seismic Certification Limits: $S_{DS} = 1.93 g$ $Z/h = 0.0$ $I_P = 1.5$ Seismic Certification Limits: $S_{DS} = 1.93 g$ 					
Component Type	Manufacturer	Model	- CODE	No	tes	UUT
Transformers	Vertiv –			Material: Cu Winding		Interp. 2
		- SAMA	2			
		O BY:N	lohammad Karim			
		C DATE	: 08/12/2022			
		R				
		VIA	UILDING			
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<i>Manufacturer: Model Line:</i>	Vertiv Corporation EXM UPS		Table Description: Accessories		TABLE 8
Building Code: CBC 2	022	Seismic Certificat	ion Limits: $S_{DS} = 1.93 g z/h = 1.0$ $S_{DS} = 1.93 g z/h = 0.0$	I _P = 1.5	
Component Type	Manufacturer	Model	R CODE Description	Not	es UUT
Battery Monitoring System (BDSUI)	Alber	1111-151	Optional Battery Monitoring System, 4"x12"x17", 10 lbs.		1,2
Global HMI Display	Vertiv	2359456	Used in both UPS Voltage models.		1,4
DC Monitoring Display Vertiv		608195G1	Used in 208V MBC, monitoring add-on		2,3
		BY:N	Aphammad Karim		
		DAT	E: 08/12/2022		
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			UILDING		

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UUT	Unit Description	Report Number	Testing Lab	Year Tested	ISO 17025 Accredited?	S _{DS}	z/h	١ _P
1	480V EXM Lineup	1701371-TR-002 R0	002 Engineering Research Center (PEER)	2018	Yes	2.00 2.00	1.0 0.0	1.5
2	208V EXM Lineup	1701371-TR-001 R1	Pacific Earthquake Engineering Research Center (PEER)	2018	Yes	2.08 2.08	1.0 0.0	1.5
3	208V 200kVA EXM UPS	1701371-TR-001 R1	Pacific Earthquake Engineering Research Center (PEER)	2018	Yes	1.93 1.93	1.0 0.0	1.5
4	480V 250kVA EXM UPS	1701371-TR-002 R0	Pacific Earthquake Engineering Research Center (PEER)	2018	Yes	1.93 1.93	1.0 0.0	1.
5	208V 40kVA EXM UPS and 200MM MBC	Q1806.0 Rev.1	Qual Tech NP by Curtiss-Wright	2018	Yes	1.98 2.18	1.0 0.0	1.
6	208 V 320 MM Battery Cabinet and 800 MM MBC	1701371-TR-002 R0	Pacific Earthquake Engineering Research Center (PEER)	2018	Yes	2.20 2.20	1.0 0.0	1.
		BY	lohammad Ka	rim				
			: 08/12/202	2	019			
		Contraction		K	~			
		VIA	BUILDING	0				
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tes:								

1701371-CR-001-R6



Manufacturer:	Vertiv Corp	poration						Γ ,		-
Model Line:	EXM UPS							Ľ	<u>. 101</u>	L
Model Number:	EXM 480V	Lineup			Serial N	umber:	N/A			
Product Constru	uction Summary	·:								
Carbon steel hou	sing, 16ga. Rear p	panel and door, 18ga.	. side pan	els						
Options/Subcon	nponent Summa	ary:								
Cabinets: 250kV/	A UPS (MNL 51SN	1250NAA01N96, SN: M	18A2U008	8), 1200mm	າ Battery	Cabinet	(MN: 51BE	NXXE2L1	1009), 60(0mm
		•			•					
-							•	0		
••	•		D. []						• •	
PGF36120U33AYE	Ξ, LLF37060D88),	Battery Monitoring S	ystem -BI	SUI (Alber	:1111-15	1), Globa	al HMI Disp	olay (Verti	v: 235945	56)
		IED.			Ms,					
			UUT Pr	operties						
Weight		Dimension (in)	Mark Marak			Lowes	t Natural	Frequen	cy (Hz)	
(lb)	Depth	Width	OSHe	ight 56	Front	-Back	Side	-Side	Ver	tical
7,186	39.0	103.6	79	9.0	8	.2	7	.8	10).9
		UUT Highest	Passed Se	eismic Run	Informa	ntion				
Buildir	ng Code	Test Criter	ia	S _{DS} (g)	z/h	I _P	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
СВС	. 2022		56 08/	2.00	$2\frac{1.0}{0.0}$	1.5	3.20	2.40	1.33	0.53
Model Number: EXM 480V Lineup Serial Number: N/A Product Construction Summary:										
Carbon steel housing, 16ga. Rear panel and door, 18ga. side panels										
Maintenance Bypass Cabinet-MBC (SN: 51MBN45AAOR1009, SN: M18A660024) Subcomponents: Bypass Module (Vertiv:0235007L), Power Module (Vertiv: 023500LB), Batteries(C&D Technologies: UPS12- 150MR), Circuit Breakers (ABB: T6N600TWAS2, T6N800TW, T7\$1000BW, XT4NU3225AFF000XXX), Circuit Breakers (Square D: PGF36120U33AYE, LLF37060D88), Battery Monitoring System -BDSUI (Alber: 1111-151), Global HMI Display (Vertiv: 2359456) UUT Properties Weight Dimension (in) Lowest Natural Frequency (Hz) (lb) Depth Width Height Front-Back Side-Side Vertice 7,186 39.0 103.6 79.0 8.2 7.8 10.9 UUT Highest Passed Seismic Run Information Building Code Test Criteria Sps (g) Z/h Ip A _{FLX+I} (g) A _{RIG-H} (g) A _{FLX-V} (g)										
				ANALY	C +					
· ·			S UT	DIRC	T	1	1 Letter		-	
1				and the set	1	2	Contraction of the second	1. 0	40 - St. 10-	I
					Front	mountin	g angles			
								Land		
		The second					128			
1		A start					the state		Si .	
1		and it.			the state					
and the second se		and the second sec	-		An and an and a second	and the second s				

UUT 1's cabinets were ganged together using four (4) M10 ganging bolts with lock and flat washer at each cabinet junction(front and back). Each cabinet was mounted using Vertiv's seismic mounting brackets (PN: 608812G1 or 605370G2). PN 605370G2 front mounting angles were attached to the cabinet with eight (8) M10 bolts with lock and flat washers and attached to the table using four (4) 5/8"-11 Grade 8 bolts with lock and flat washers. The back mounting angles were attached to the unit with four (4) M10 bolts with lock and flat washers. Cleats were placed over back mounting angles and were attached to the table using four (4) 5/8". 11 Grade 8 bolts with lock and flat washers. PN 608812G1 mounting kits were attached to the cabinets and table in the same manner but with three (3) and (4) M10 bolts per angle, two (2) 5/8"-11 Grade 8 bolts with lock and flat washers (front angle) and two (2) 5/8"-11 Grade 8 bolts with lock and flat washers per cleat (back).

Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test. Contents were included in testing per operating conditions.

1701371-CR-001-R6



	Vertiv Cor	poration						1117	ว	
Model Line: EXM UPS UUI 2 Model Number: EXM Lineup Serial Number: N/A Product Construction Summary: N/A Carbon steel housing, 16ga. rear panel and door, 18ga. side panels Descriptions/Subcomponent Summary: Carbon steel housing, 10ga. rear panel and door, 18ga. side panels N/A Descriptions/Subcomponent Summary: Stabinets: 208V 200 kVA UPS (MN: 47SN200UAC01009, SN:M18A1B0006), 880MM BC (MN:47BEUYA92L11009, SN: M18ACG0044), 208V DTC MN:47TXJ260BC0RS09, SN: M18A6U0006), 208V PBC 300MM (MN:47PLU8ACC1S1009, SN:M18A790001), 2208V PBC 800MM										
Model Number:	EXM Line	цр		Serial N	umber:	N/A				
Product Constru	uction Summary	V:								
Carbon steel hoι	ısing, 16ga. rear	panel and door, 18ga	a. side panels							
	-									
								14), 208V D	тс	
-	-				-					
)5), BDC 225A (MN:47M								
		rtiv: 02359717), Bypass				-			-	
		eka-Unigy : HR5500), (C	-							
		B: T3N225TWBAS2, T2								
ransformers (ven	(IV: 02-818060-00,	02-818059-00), BDC Mo	initoring Display (vert	IV: 608195G	I), Batter	y Monitoring	g System (vertiv: 111	.1-151)	
		NEL								
			UUT Properties							
Weight		Dimension (in)	un Warth March wheeler XX		Lowes	st Natural	Frequen	cy (Hz)		
(lb)	Depth	Width	OS Height 56	Front	-Back	Side	-Side	Ver	tical	
(10)	Deptil		000000							
10,242	39.0	203.0	79.0		5.7		.2	7	.4	
	-	203.0		6	5.7		.2	7	.4	
10,242	-	203.0	79.0 Passed Seismic R	e un Inform	5.7	9	1	7 A _{FLX-V} (g)	•	
10,242 Buildi	39.0	203.0 UUT Highest	79.0 Passed Seismic R eria S _{DS} (g) 2.08	e un Inform	ation	9	1	<u>ا</u>	•	
10,242 Buildi	39.0 ng Code	203.0 UUT Highes Test Crite	79.0 Passed Seismic R ria Sps (g) 156 08/ 2.08	e un Inform z/h 1.0 0.0	.7 ation I₽ 1.5	9 А_{FLX-H} (g) 3.33	А_{гід-н} (g) 2.50	A_{FLX-V} (g) 1.39	A _{RIG-V} (g	
10,242 Buildi CBC	39.0 ng Code	203.0 UUT Highes Test Crite	79.0 Passed Seismic R ria S _{DS} (g) 156 8/ 2.08	e un Inform z/h 1.0 0.0	.7 ation I₽ 1.5	9 А_{FLX-H} (g) 3.33	A _{RIG-H} (g)	A_{FLX-V} (g) 1.39	A _{RIG-V} (g	
10,242 Buildi CBC	39.0 ng Code	203.0 UUT Highes Test Crite	79.0 Passed Seismic R ria Sps (g) 156 08/ 2.08	e un Inform z/h 1.0 0.0	.7 ation I₽ 1.5	9 А_{FLX-H} (g) 3.33	А_{гід-н} (g) 2.50	A_{FLX-V} (g) 1.39	A _{RIG-V} (§	
10,242 Buildi CBC	39.0 ng Code	203.0 UUT Highes Test Crite	79.0 Passed Seismic R ria Sps (g) 156 08/ 2.08	e un Inform z/h 1.0 0.0	.7 ation I₽ 1.5	9 А_{FLX-H} (g) 3.33	А_{гід-н} (g) 2.50	A_{FLX-V} (g) 1.39	A _{RIG-V} (§	
10,242 Buildi CBC	39.0 ng Code	203.0 UUT Highes Test Crite	79.0 Passed Seismic Rest gria Sps (g) 156 2.08 Rear mounting ang	z/h 1.0 0.0 gle and clear	.7 ation I₽ 1.5	9 А _{FLX-H} (g) 3.33 М1	A _{RIG-H} (g) 2.50 0 Ganging I	A _{FLX-V} (g) 1.39 Bolts	A _{RIG-V} (§	
10,242 Buildi CBC	39.0 ng Code	203.0 UUT Highes Test Crite	79.0 Passed Seismic R ria Sps (g) 156 08/ 2.08	z/h 1.0 0.0 gle and clear	.7 ation I₽ 1.5	9 А _{FLX-H} (g) 3.33 М1	А_{гід-н} (g) 2.50	A _{FLX-V} (g) 1.39 Bolts	A _{RIG-V} (§	
10,242 Buildi CBC	39.0 ng Code	203.0 UUT Highes Test Crite	79.0 Passed Seismic Rest gria Sps (g) 156 2.08 Rear mounting ang	z/h 1.0 0.0 gle and clear	.7 ation I₽ 1.5	9 А _{FLX-H} (g) 3.33 М1	A _{RIG-H} (g) 2.50 0 Ganging I	A _{FLX-V} (g) 1.39 Bolts	A _{RIG-V} (§	
10,242 Buildi CBC	39.0 ng Code	203.0 UUT Highes Test Crite	79.0 Passed Seismic Rest gria Sps (g) 156 2.08 Rear mounting ang	z/h 1.0 0.0 gle and clear	.7 ation I₽ 1.5	9 А _{FLX-H} (g) 3.33 М1	A _{RIG-H} (g) 2.50 0 Ganging I	A _{FLX-V} (g) 1.39 Bolts	A _{RIG-V} (
10,242 Buildi CBC	39.0 ng Code	203.0 UUT Highes Test Crite	79.0 Passed Seismic Rest gria Sps (g) 156 2.08 Rear mounting ang	z/h 1.0 0.0 gle and clear	.7 ation I₽ 1.5	9 А _{FLX-H} (g) 3.33 М1	A _{RIG-H} (g) 2.50 0 Ganging I	A _{FLX-V} (g) 1.39 Bolts	A _{RIG-V} (

Cabinets in UUT 2 were ganged together using four (4) M10 ganging bolts, lock washers and flat washer at each cabinet junction(front and back). Each cabinet was mounted using Vertiv's seismic mounting brackets: PN 605370G1, 605370G2, or 607949G1. PN 605370G2 front mounting angles were attached to the cabinet with eight (8) M10 bolts with lock and flat washers and attached to the table using four (4): 5/8"-11 Grade 8 bolts, lock washers, and flat washers. Rear mounting angles were attached to the unit with four (4): M10 bolts, lock washers, and flat washers. Cleats were placed over rear mounting angles and were attached to the table using four (4): 5/8"-11 Grade 8 bolts, lock washers, and flat washers. PN 607949G1 mounting kits were attached to the cabinets and table in the same manner but with three (3) M10 bolts per angle and two (2) 5/8"-11 Grade 8 bolts, lock washers, and flat washers. PN 607949G1 mounting kits were attached to the cabinets and table in the same manner but with three (3) M10 bolts per angle and two (2) 5/8"-11 Grade 8 bolts, lock washers, and flat washers. The cabinet shake table with two (2): 5/8"-11 Grade 8 bolts, lock washers, and flat washers. The thumb screw will be fitted by manufacturer with (1) M6 thumb screw as an additional measure to secure doors. The thumb screw will be installed at the top corner of the front cabinet door on the same side as the door latch. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test. Contents were included in testing per operating conditions.

1701371-CR-001-R6



Manufacturer:	Vertiv Co	rporatio	n						1	JUT	2
Model Line:	EXM UPS										5
Model Number:	47SN200U	JAC0110	00			Serial N	umber:	M18A1B0	0004		
Product Constru	-										
Carbon steel hous	sing, 16ga. rear	panel ar	nd door, 18ga	a. side panels	S						
Options/Subcom	nonent Summ	arv									
Power Module (Ve	-	-	EnerSvs Dat	aSafe: 12HX	540. Deka	-Unigy: H	IR5500.	C&D Techr	nologies:	UPS12-54	OMR).
Bypass Module (V									lotogics.	01012 01	01111,
		-		DCOI)E a		·				
			F	JK COL							
			JEV I			Ys)					
		Ľ		UUT Prop	perties		T				
Weight		Din	nension (in)	lmWerl/Maserlind	WXXXXXXXX		Lowes	st Natural	Frequen	1	
(lb)	Depth	8	Width	OS Height 56		Front-Back		Side-Side		Vertical	
1,753	39.0		34.5	79.			.1	10).2	18	3.6
				t Passed Sei.		Inform	ation			1	
Buildin	g Code		Test Crite	eria	$S_{DS}(g)$	z/h	I _P	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g
CBC	2022		ICC-ESAC	156 08/1	$2^{1,93}_{1,202}$	2 1.0	1.5	3.09	2.32	1.29	0.52
Toot Mountine D	ataila	Z			1.93	0.0	6				
Test Mounting D	etails:		T			ARD .	N/				
			P			Re	ar mou	nting angl	e and cle	eat	
			VIA								
M6 Th	umb Screw			BUILD	NO	1				5 <u>5</u> 3	
	ANNUAL COLOR								1		
	ebert.cxM		-				Front	mounting	g angle		
		/	1				1	-			
		1						©©	<u> </u>	•	-
						3		3	-		
						Nº 2				0	

Seismic mount kit (PN 605370G2) front mounting angles were attached to the cabinet with eight (8) M10 bolts with lock and flat washers and attached to the table using four (4) 5/8"-11 Grade 8 bolts with lock and flat washers. The rear mounting angles was attached to the unit with four (4): M10 bolts, lock washers and flat washers. Cleats were placed over back mounting angles and were attached to the table using four (4): 5/8"-11 Grade 8 bolts, lock washers and flat washers. Each cabinet will be fitted by manufacturer with (1) M6 thumb screw as an additional measure to secure doors. The thumb screw will be installed at the top corner of the front cabinet door on the same side as the door latch.

Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test. Contents were included in testing per operating conditions.

1701371-CR-001-R6



Manufacturer:		rporation					JUT	Л
Model Line:	EXM UPS							4
Model Number:		NAA01345		Serial Numb	<i>er:</i> M18A2L	10006		
Product Constru	-	-						
Carbon steel hou	sing, 16ga. Rear	r panel and door, 18g	a. side panels					
Options/Subcon	nponent Summ	narv:						
· ·	-	-	tiv: 023500LB), Globa	l HMI Display	(Vertiv: 23594	156)		
,		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		,	,		
			RCODEC					
		DFL	JK COBL (DAA				
		NED		MAS				
		<u> </u>	UUT Properties	<u> </u>				
Weight		Dimension (in)			west Natura		1	
(lb)	Depth	Width	OS Height 56	Front-Bac	111	Side-Side		tical
1,356	39.0	33.0	79.0	5.0		7.7	2	0.2
			t Passed Seismic Rur				<u> </u>	<u> </u>
Buildir	g Code	Test Crite			P A _{FLX-H} (g) A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g
CBC	2022	ICC-ESAC	$156 \ 08/12/202$	$\frac{1.0}{2.00}$ 1	.5 3.09	2.32	1.29	0.52
Toot Mounting D	ataila	Z	1.93	0.0				
Test Mounting D	etans:				e, e, .	×.		
					1			
C. Hereiter		VIA		COV P				-
	RU THE 4	B 8888888888	BLITI-DING					
							and the second	
		\\\\\\\Liebe	ert _e exm					
			Power System					
		MUMMUM						
								2

Seismic mount kit (PN 605370G2) front mounting angles were attached to the cabinet with eight (8) M10 bolts with lock and flat washers and attached to the table using four (4) 5/8"-11 Grade 8 bolts with lock and flat washers. The back mounting angles were attached to the unit with four (4) M10 bolts with lock and flat washers. Cleats were placed over back mounting angles and were attached to the table using four (4) 5/8"-11 Grade 8 bolts with lock and flat washers. PN 605370G1 mounting kits were attached to the cabinets and table in the same manner but with three (3) M10 bolts per angle, two (2) 5/8"-11 Grade 8 bolts with lock and flat washers per cleat (back). Front skin of MBC attached using one (1) self tapping 1/4" screw at upper right corner of door.

Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

1701371-CR-001-R6



Manufacturer:	Vertiv Corp	oration								-
Model Line:	EXM UPS								JUT	5
Model Number:	EXM UPS 20	08V w/200mm Batte	ry Cabinet	t	Serial N	umber:	47SA03DA	CM0QS ar	nd M17HZ	B0074
Product Constru	uction Summary:									
Carbon steel hou	ising, 16ga. Rear p	anel and door, 18ga	. side pane	els						
Options/Subcor	nponent Summal	ry:								
	=	emens Circuit Break	(er (HFK3B	3225MA2RI	EX6), Batt	teries - Ei	nerSys Dat	a Safe (12	2HX205)	
		- (RCO	DEC						
		EDFC		operties	Ms					
Weight		Dimension (in)				Lowes	st Natural	Frequen	cy (Hz)	
(lb)	Depth	Width	n Height		Front-Back		Side-Side		Ver	tical
2,031	39.1	31.8	OSP ₇	9.3556	1.	3.6	6	.9	24	4.7
		UUT Highest	Passed Se	eismic Rul	n Inform	ation		-		
Buildi	ng Code	Test Crite	fið hamn	S _{DS} (g)	rinz/h	I _P	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (
СВС	2022	ICC-ES AC1	.56	1.98	1.0	1.5	3.17	2.38	1.46	0.59
		DATI	: 08/	$\frac{2.18}{2/202}$	2 0.0	Vo l				<u> </u>
Test Mounting L	Details:	Z	<u>seaaaaaaa</u>	3333333333	R	ear moi	unting an	gle and	cleat	
	9°	NORMAN A				No			. 1	
					1.3		Ö	0	C -	
					cov.					and the second second
			い見て	DING	0 1				innin (8
					HIII					
		8							All and a second	
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				1000						-
			and the second	1	10 - 10	a de	in	-		
and the second second				1.		.0				Contraction of the

Seismic mounting kit (P/N 605370G1) front mounting angle was attached to the UPS with eight (8) M10 bolts with lock and flat washers and attached to the table using four (4) 5/8"-11 Grade 8 bolts with lock and flat washers. Each back mounting angle was attached to the UPS unit with four (4) M10 bolts with lock and flat washers. Cleats were placed over back mounting angles and were attached to the table using four (4) 5/8"-11 Grade 8 bolts with lock and flat washers. Seismic mounting kit (P/N 607949G2) for the MBC cabinet, was attached to the cabinets and table in the same manner but with three (3) M10 bolts per angle, two (2) 5/8"-11 Grade 8 bolts with lock and flat washers bolts with lock and flat washers per cleat (back). Front skin of MBC attached using two(2)M6 x 35mm cap screws.

Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test. Contents were included in testing per operating conditions.

OSP-0556

1701371-CR-001-R6



Manufacturer:	Vertiv Co	rporatio	'n								r	
Model Line:	EXM UPS									JUT	6	
Model Number:	EXM 208\	/ Lineup				Serial N	umber:	N/A				
Product Constru	uction Summar	y:										
Carbon steel hou	ısing, 16ga. Rear	[.] panel a	nd door, 18ga	ı. side pa	nels							
Ontions/Cubes												
<i>Options/Subcor</i> Cabinets: 208V 3	=	-	/NI·47RPEMX5	21 10582	SN-M18FCG	0026) an	4 208V 8	00MM Maii	ntonanco	Bynass	ahinot	
(MN: 47MBU48C0				2210302	SN.MIOLCO	0020) an	u 200 v 0		internative	bypass c	abiliet	
Subcomponents				50E, 12H	X205-FR) an	d (Deka-l	Jnigy: HI	R1500)				
•	,	,	FC	RCC	JDF C	2	0,	,				
			EQ.			MS						
			S.	υυτ Ρ	roperties							
Weight		Dir	nension (in)		<u> </u>		Lowes	st Natural	Frequen	cy (Hz)		
(lb)	Depth	4	Width	OSR	eight 56	Front	-Back	Side	-Side	Ver	ertical	
1,830	39.0		44.0		79.0	5	.5	9	.2	12	2.8	
			UUT Highest	Passed S	Seismic Rur	Informa	ntion				-	
Buildi	ng Code		Test Crite	ria	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-ESAC1	56 08	/1 2.20	2 1.0	1.5	3.52	2.64	1.47	0.59	
		Y	C C C C C C C C C C C C C C C C C C C		2.20	0.0	10	0.01	2.0.1		0.00	
Test Mounting L	Details:						~					
1			Rear m	nounting	angles			Front	mounti	ng		
A				and clear		-02		á	angles			
		10	A	SLITI	DING		10 million					
				OIL	UIN	1 1					11 /.	
		2								0 0		
				-		/	•	San Sta			4	
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- Mar			1	1	Ser and	1.						
				1000				Contraction of the		State State State		

UUT 6's cabinets were ganged together using four (4) M10 ganging bolts with lock and flat washer at each cabinet junction(front and back). Each cabinet was mounted using Vertiv's seismic mounting brackets (PN: 607962G1 or 605370G2). PN 605370G2 front mounting angles were attached to the cabinet with eight (8) M10 bolts with lock and flat washers and attached to the table using four (4) 5/8"-11 Grade 8 bolts with lock and flat washers. The back mounting angles were attached to the unit with four (4) M10 bolts with lock and flat washers. Cleats were placed over back mounting angles and were attached to the table using four (4) 5/8"-11 Grade 8 bolts with lock and flat washers. PN 607962G1 mounting kits were attached to the cabinets and table in the same manner but with three (3) M10 bolts per angle, two (2) 5/8"-11 Grade 8 bolts with lock and flat washers (front angle) and two (2) 5/8"-11 Grade 8 bolts with lock and flat washers per cleat (back).

Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test. Contents were included in testing per operating conditions.