



**DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION
FACILITIES DEVELOPMENT DIVISION**

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

OFFICE USE ONLY

APPLICATION #: OSP-0499

HCAI Special Seismic Certification Preapproval (OSP)

Type: New Renewal

Manufacturer Information

Manufacturer: Crucial Power Products

Manufacturer's Technical Representative: Sherri Shahsavari

Mailing Address: 14000 S Broadway, Los Angeles, CA 90061

Telephone: (323) 721-5017

Email: sherris@onlinepower.com

Product Information

Product Name: UPS and Batteries

Product Type: Lighting Inverter Systems

Product Model Number: See Attachment

General Description: Single phase or three phase emergency lighting inverter with battery backup inside of a carbon steel electrical cabinet enclosure.

Mounting Description: Rigid, Floor Mounted

Tested Seismic Enhancements: Seismic enhancements made to the test units and/or modifications required to address anomalies during the tests shall be incorporated into the production units.

Applicant Information

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

Contact Person: Galen Reid

Mailing Address: 5215 Hellyer Ave. Suite 210, San Jose, CA 95138

Telephone: (541) 604-7225

Email: greid@structint.com

Title: Director, TRU Compliance





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

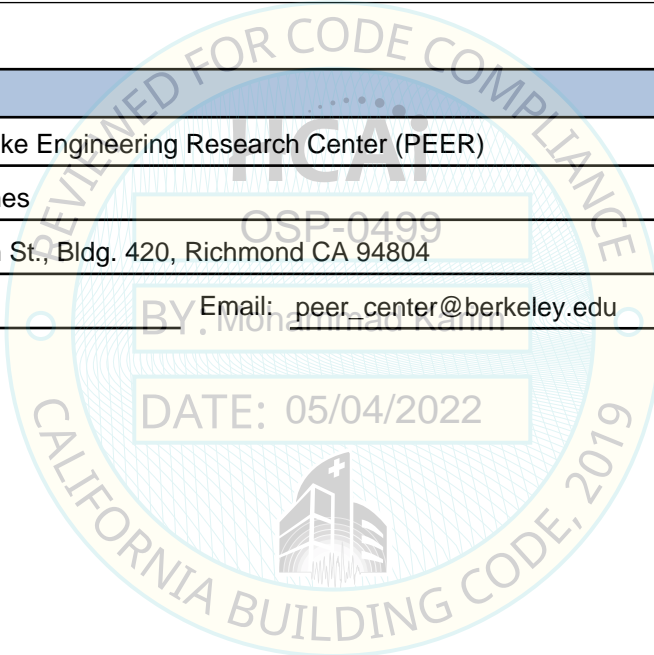
Company Name: STRUCTURAL INTEGRITY ASSOCIATES, INC.
Name: Andrew Coughlin California License Number: S6082
Mailing Address: 5215 Hellyer Ave, Suite 101, San Jose, CA 95138-1025
Telephone: (415) 635-8461 Email: acoughlin@structint.com

Certification Method

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

Testing Laboratory

Company Name: Pacific Earthquake Engineering Research Center (PEER)
Contact Person: Clement B Barthes
Mailing Address: 1301 South 46th St., Bldg. 420, Richmond CA 94804
Telephone: (510) 642-3437 Email: peer_center@berkeley.edu





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Seismic Parameters

Design Basis of Equipment or Components (F_p/W_p) = 1.44 (SDS = 2.0g); 1.35 (SDS = 3.0g)

SDS (Design spectral response acceleration at short period, g) = 2.0 (z/h = 1.0); 3.0 (z/h = 0.0)

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

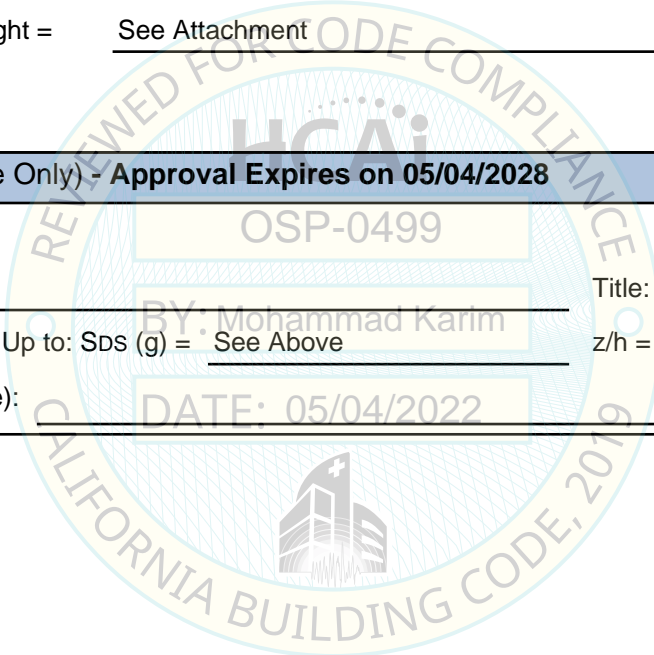
HCAI Approval (For Office Use Only) - Approval Expires on 05/04/2028

Date: 5/4/2022

Name: Mohammad Karim Title: Supervisor, Health Facilities

Special Seismic Certification Valid Up to: SDS (g) = See Above z/h = See Above

Condition of Approval (if applicable): DATE: 05/04/2022



SPECIAL SEISMIC CERTIFICATION CERTIFIED COMPONENT MATRIX

2200061-CR-001-R0



Manufacturer: Crucial Power Products	TABLE 1
Model Line: Wave Rider 1	

Certified Product Construction Summary:
Base & Top: 12 GA. carbon steel, **Back & Sides:** 14 GA. carbon steel, **Doors:** 16 GA. carbon steel.

Certified Options Summary:
 Input/Output voltage: 120-480VAC.

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 2019 **Seismic Certification Limits:** $S_{DS} = 2.0 g$ $z/h = 1.0$ $I_P = 1.5$
 $S_{DS} = 3.0 g$ $z/h = 0.0$

Model Line	Model	Dimensions (in)			Weight (lb)	Notes	UUT
		Depth	Width	Height			
Wave Rider 1 Cabinet Type A	SV-WR3.0A0100N1	18.0	39.0	68.0	1,795	UUT: 120V in, 120V out	1
	SV-WR8.0A5800T1	18.0	39.0	68.0	1,795		Interp.
	SV-WR8.0B1300N1	18.0	39.0	68.0	1,795		Interp.
	SV-WR8.0B5800T1	18.0	39.0	68.0	1,795		Interp.
	SV-WR8.0D0400N1	18.0	39.0	68.0	1,795		Interp.
	SV-WR8.0D5800T1	18.0	39.0	68.0	1,795		Interp.
	SV-WR8.0R2500N1	18.0	39.0	68.0	1,795		Interp.
	SV-WR8.0R5800T1	18.0	39.0	68.0	1,795		Interp.
	SV-WR8.0H1100T1	18.0	39.0	68.0	1,795		Interp.
	SV-WR8.0H2500T1	18.0	39.0	68.0	1,795		Interp.
	SV-WR8.0H5800T1	18.0	39.0	68.0	1,795		Interp.
	SV-WR8.0R1100T1	18.0	39.0	68.0	1,795		Interp.
Wave Rider 1 Cabinet Type B	SV-WR010A0100T1	30.5	51.0	70.0	2,438		Interp.
	SV-WR010A5800T1	30.5	51.0	70.0	2,438		Interp.
	SV-WR010B1300N1	30.5	51.0	70.0	2,438		Interp.
	SV-WR010B5800T1	30.5	51.0	70.0	2,438		Interp.
	SV-WR010D0400N1	30.5	51.0	70.0	2,438		Interp.
	SV-WR010D5800T1	30.5	51.0	70.0	2,438		Interp.
	SV-WR010R2500N1	30.5	51.0	70.0	2,438		Interp.
	SV-WR010R5800T1	30.5	51.0	70.0	2,438		Interp.
	SV-WR010H1100T1	30.5	51.0	70.0	2,438		Interp.
	SV-WR010H2500T1	30.5	51.0	70.0	2,438		Interp.
	SV-WR010H5800T1	30.5	51.0	70.0	2,438		Interp.
	SV-WR010R1100T1	30.5	51.0	70.0	2,438		Interp.

SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENT MATRIX

2200061-CR-001-R0



Manufacturer: Crucial Power Products	Table Description: Batteries	TABLE 3
Model Line: Wave Rider 1 / Wave Rider 3		

Building Code: CBC 2019 **Seismic Certification Limits:** $S_{DS} = 2.0g$ $z/h = 1.0$ $I_p = 1.5$
 $S_{DS} = 3.0g$ $z/h = 0.0$

Component Type	Manufacturer	Model	Description	Notes	UUT
Battery	Exide Technologies	S12V285F	12V, 285-270WPC, lead acid		2
		S12V300F	12V, 306-290WPC, lead acid		Interp.
		S12V370NGF	12V, 373-353WPC, lead acid		Interp.
		S12V550NGF	12V, 550-521WPC, lead acid		5
		M12V105FT	12V, 100Ah, lead acid		5
		M12V155FT	12V, 150Ah, lead acid		Interp.
	Vision Group	M12V180FT	12V, 175Ah, lead acid		5
		UNA12-370	12V, 95 Ah, lead acid		1
	Power-Sonic Co.	UNA12-420	12V, 106 Ah, lead acid		2
		PHR-12350	12V, 95 Ah, lead acid		1
	MK (Unigy)	HR7500ET	12V, 750 WPC, lead acid		5
	CSB Battery/Hitachi Chemical Company	HRL12330WFR	12V, 330V, lead acid		1
HRL12540WFR		12V, 540W, lead acid		5	

SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENT MATRIX

2200061-CR-001-R0



Manufacturer: Crucial Power Products	Table Description: Transformers	TABLE 4
Model Line: Wave Rider 1 / Wave Rider 3		

Building Code: CBC 2019	Seismic Certification Limits:	$S_{DS} = 2.0 g$ $z/h = 1.0$	$I_p = 1.5$
		$S_{DS} = 3.0 g$ $z/h = 0.0$	

Component Type	Manufacturer	Model	Description	Notes	UUT
Transformer	OnLine Power Inc.	1400-105	50VA, Cu windings, 120-277V in, 120V out		Extrap.
		1400-110	130VA, Cu windings, 208-277V in, 120V out		Extrap.
		1400-111	60VA, Cu windings, 208-480V in, 120V out		Extrap.
		1400-113	200VA, Cu windings, 120-277V in, 120V out		2.00
		1400-114	130VA, Cu windings, 208-480V in, 120V out		3.00
		1450-1473-02	5kVA, Cu windings, 120-277V in, 120-277V out		Interp.
		1450-1613-01	7.5kVA, Cu windings, 208-277V in, 208-277V out		Interp.
		1450-1661-01	7.5kVA, Cu windings, 480V in, 240-277V out		Interp.
		1450-1473-04	10kVA, Cu windings, 120-277V in, 120-277V out		Interp.
		1450-1473-06	15kVA, Cu windings, 120-277V in, 120-277V out		Interp.
		1450-1629-02	15kVA, Cu windings, 120V in, 240V out		Interp.
		1450-1507-02	15kVA, Cu windings, 158V in, 120V out		3.00
		1450-1508-02	15kVA, Cu windings, 158V in, 277V out		Interp.
		1450-1613-02	15kVA, Cu windings, 208-277V in, 208-277V out		Interp.
		1450-1661-02	15kVA, Cu windings, 480V in, 240-277V out		Interp.
		1450-1613-03	18kVA, Cu windings, 208-277V in, 208-277V out		Interp.
		1450-1473-07	20kVA, Cu windings, 120-277V in, 120-277V out		Interp.
		1450-1629-03	20kVA, Cu windings, 120V in, 240V out		Interp.
		1450-1507-03	20kVA, Cu windings, 158V in, 120V out		Interp.
		1450-1508-03	20kVA, Cu windings, 158V in, 277V out		Interp.
1450-1613-04	20kVA, Cu windings, 208-277V in, 208-277V out		2.00		
1450-1661-03	20kVA, Cu windings, 480V in, 240-277V out		2.00		
1450-1506-06	23kVA, Cu windings, 120V in, 127-220V out		3.00		

SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENT MATRIX

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Manufacturer: Crucial Power Products	Table Description: Transformers	TABLE 4
Model Line: Wave Rider 1 / Wave Rider 3		

Building Code: CBC 2019	Seismic Certification Limits:	$S_{DS} = 2.0 g$ $z/h = 1.0$	$I_p = 1.5$
		$S_{DS} = 3.0 g$ $z/h = 0.0$	

Component Type	Manufacturer	Model	Description	Notes	UUT
Transformer	OnLine Power Inc.	1450-1620-06	23kVA, Cu windings, 120V in, 277-220V out		Interp.
		1450-1525-06	23kVA, Cu windings, 277V in, 120-220V out		Interp.
		1450-1619-06	23kVA, Cu windings, 277V in, 120-220V out		Interp.
		1450-1519-06	23kVA, Cu windings, 277V in, 127-220V out		Interp.
		1450-1509-01	30kVA, Cu windings, 213V in, 120V out		Interp.
		1450-1510-01	30kVA, Cu windings, 213V in, 277V out		Interp.
		1450-1509-02	40kVA, Cu windings, 213V in, 120V out		Interp.
		1450-1510-02	40kVA, Cu windings, 213V in, 277V out		Interp.
		1450-1506-07	45kVA, Cu windings, 120V in, 173-300V out		Interp.
		1450-1620-07	45kVA, Cu windings, 120V in, 277-300V out		Interp.
		1450-1525-07	45kVA, Cu windings, 277V in, 120-300V out		Interp.
		1450-1619-07	45kVA, Cu windings, 277V in, 120-300V out		Interp.
		1450-1519-07	45kVA, Cu windings, 277V in, 173-300V out		Interp.
		1450-1509-03	50kVA, Cu windings, 396V in, 120V out		Interp.
		1450-1510-03	50kVA, Cu windings, 396V in, 277V out		Interp.
		1450-1620-08	58kVA, Cu windings, 120V in, 277-532V out		Interp.
		1450-1506-08	58kVA, Cu windings, 120V in, 307-532V out		Interp.
		1450-1525-08	58kVA, Cu windings, 277V in, 120-532V out		Interp.
		1450-1619-08	58kVA, Cu windings, 277V in, 120-532V out		Interp.
		1450-1519-08	58kVA, Cu windings, 277V in, 307-532V out		Interp.
1450-1506-09	70kVA, Cu windings, 120V in, 307-532V out		Interp.		
1450-1525-09	70kVA, Cu windings, 277V in, 120-532V out		Interp.		
1450-1619-09	70kVA, Cu windings, 277V in, 120-532V out		Interp.		

SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENT MATRIX

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Manufacturer: Crucial Power Products Model Line: Wave Rider 1 / Wave Rider 3		Table Description: Circuit Breakers			TABLE 5	
Building Code: CBC 2019		Seismic Certification Limits:			$S_{DS} = 2.0g \quad z/h = 1.0$ $S_{DS} = 3.0g \quad z/h = 0.0$	
					$I_p = 1.5$	
Component Type	Manufacturer	Model	Description	Notes	UUT	
Circuit Breaker	Cutler Hammer (ED)	ED2125L	2P, 125A		1	
		ED2150L	2P, 150A		Interp.	
		ED2175L	2P, 175A		Interp.	
		ED2200L	2P, 200A		1	
		ED3125L	3P, 125A		Interp.	
		ED3150L	3P, 150A		Interp.	
		ED3175L	3P, 175A		4	
	Cutler Hammer (QC)	QC1030	1P, 30A			1
		QC1050	1P, 50A			Interp.
		QC1100	1P, 100A			Interp.
		QC2015H	2P, 15A			Interp.
		QC2020H	2P, 20A			1
		QC2025H	2P, 25A			Interp.
		QC2030H	2P, 30A			Interp.
		QC2040H	2P, 40A			Interp.
		QC2050H	2P, 50A			1
		QC2060H	2P, 60A			Interp.
		QC2070	2P, 70A			Interp.
		QC2080	2P, 80A			Interp.
		QC2090	2P, 90A			Interp.
		QC2100H	2P, 100A			Interp.
		QC3035H	3P, 35A			3
		QC3050H	3P, 50A			Interp.

SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENT MATRIX

2200061-CR-001-R0



Manufacturer: Crucial Power Products	Table Description: Circuit Breakers	TABLE 5
Model Line: Wave Rider 1 / Wave Rider 3		

Building Code: CBC 2019	Seismic Certification Limits:	$S_{DS} = 2.0 g$ $z/h = 1.0$	$I_p = 1.5$
		$S_{DS} = 3.0 g$ $z/h = 0.0$	

Component Type	Manufacturer	Model	Description	Notes	UUT		
Circuit Breaker	Cutler Hammer (QC)	QC3070H	3P, 70A		Interp.		
		QC3080H	3P, 80A		Interp.		
		QC3090H	3P, 90A		Interp.		
		QC3100H	3P, 100A		3		
	Cutler Hammer (GHC)	GHC1015	1P, 15A			1	
		GHC1025	1P, 25A			1	
		GHC1035	1P, 35A			Interp.	
		GHC1040	1P, 40A			Interp.	
		GHC1050	1P, 50A			Interp.	
		GHC1060	1P, 60A			Interp.	
		GHC1080	1P, 80A			Interp.	
		GHC1100	1P, 100A			2	
		GHC3020	3P, 20A			Interp.	
		GHC3030	3P, 30A			Interp.	
		GHC3040	3P, 40A			3	
		GHC3060	3P, 60A			Interp.	
		GHC3080	3P, 80A			4	
		GHC3100	3P, 100A			3	
		Cutler Hammer (EGE)	EGE3020FFG	3P, 20A			4
			EGE3030FFG	3P, 30A			Interp.
	EGE3040FFG		3P, 40A			Interp.	
	EGE3050FFG		3P, 50A			Interp.	
	EGE3070FFG		3P, 70A			Interp.	

SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENT MATRIX

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Manufacturer: Crucial Power Products Model Line: Wave Rider 1 / Wave Rider 3		Table Description: Circuit Breakers		TABLE 5		
Building Code: CBC 2019		Seismic Certification Limits:		$S_{DS} = 2.0g \quad z/h = 1.0$ $S_{DS} = 3.0g \quad z/h = 0.0$		
Component Type	Manufacturer	Model	Description	Notes	UUT	
Circuit Breaker	Cutler Hammer (EGE)	EGE3080FFG	3P, 80A		Interp.	
		EGE3100FFG	3P, 100A		4	
	ABB	TS3N060TW-2	2P, 60A			1
		TS3N090TW-2	2P, 90A			3
		TS3N100TW-2	2P, 100A			5
		TS3N125TW-2	2P, 125A			Interp.
		TS3N150TW-2	2P, 150A			2
		T3N200TW	2P, 200A			4
		S201-C20	1P, 20A			2
		S203-D20	3P, 20A			Interp.
		S203-B20	3P, 20A			Interp.
		T2S015TW	3P, 15A			Interp.
		T2S025TW	3P, 25A			Interp.
		T2S030TW	3P, 30A			Interp.
		T2S040TW	3P, 40A			Interp.
		T2S050TW	3P, 50A			Interp.
		T2S060TW	3P, 60A			Interp.
		T2S070TW	3P, 70A			Interp.
		T2S080TW	3P, 80A			Interp.
		T2S090TW	3P, 90A			4

SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENT MATRIX

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Manufacturer: Crucial Power Products	Table Description: Miscellaneous	TABLE 6
Model Line: Wave Rider 1 / Wave Rider 3		

Building Code: CBC 2019	Seismic Certification Limits:	$S_{DS} = 2.0 g$ $z/h = 1.0$	$I_p = 1.5$
		$S_{DS} = 3.0 g$ $z/h = 0.0$	

Component Type	Manufacturer	Model	Description	Notes	UUT
PCBD	OnLine Power Inc.	1625-287-01	1PH, 3-5kW, 10kW & 3PH, 10kW-15kW (24 Ω Resistor)		1
		1625-287-02	1PH, 7.5, 12.5, 15, 17kW & 3PH, 20 kVA-25kVA (14 Ω Resistor)		2
		1625-287-03	3PH, 40kVA (6.8 Ω, 1/2w Resistor), 150A CT		3
		1625-287-05	3PH, 20kVA	Identical to '-287-03 (software)	Interp.
		1625-287-XX	Base Board (1, 3 Phase Power Board)		1, 2, 3
		1625-288-05	1PH, 3-10kW	Identical to '-288-07 (software)	Interp.
		1625-288-07	1PH, 12.5kW, 17kW		2
		1625-288-XX	Base Board (Standard Control Board)		1, 2
		1625-291-01	1PH & 3PH, SCR Driver PDBD		4
		1625-291-XX	Base Board (SCR Drive Board)		1
		1625-296-05	3PH, Control PCBD, 10-15kVA with LCD		3
		1625-296-06	3PH, Control PCBD, 20-30kVA with LCD	Identical to '-296-05 (software)	Interp.
		1625-296-07	3PH, Control PCBD, 50kVA/50kW with LCD	Identical to '-296-05 (software)	Interp.
		1625-296-08	3PH, Control PCBD, 40kVA with LCD	Identical to '-296-05 (software)	Interp.
		1625-296-XX	Base Board (3 Phase Control Board)		3
		1625-298-01	3PH, 50kVA & 50 kW, 150A CT		4
		1625-298-XX	Base Board (3 Phase Power Board)		4
		1625-305-XX	3PH, DC to DC converter, 50kVA/50kW		4
		1625-343-XX	1PH & 3PH, Alarm, Dirstrubution PCBD		1
		1625-344-XX	1PH Control PCBD (Event Logging)		1
1625-355-XX	3PH, Control PCBD (Event Logging)		4		

SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENT MATRIX

2200061-CR-001-R0



Manufacturer: Crucial Power Products		Table Description: Miscellaneous			TABLE 6
Model Line: Wave Rider 1 / Wave Rider 3					
Building Code: CBC 2019		Seismic Certification Limits:		$S_{DS} = 2.0 g$ $z/h = 1.0$	$I_p = 1.5$
				$S_{DS} = 3.0 g$ $z/h = 0.0$	
Component Type	Manufacturer	Model	Description	Notes	UUT
PCBD	OnLine Power Inc.	1625-362-XX	3PH, Netagent Interface (Network Mgmt)		4
		1625-367-XX	3PH, Metering Interface PCBD		4
		1625-405-XX	1PH & 3PH, Slow Transfer PCBD		1
		1625-406-XX	3PH, Output Overload Sensing PCBD		1
		1625-407-XX	1PH & 3PH, Fast Transfer Processor PCBD		1
		1625-461-XX	1PH & 3PH, Alarm Relay PCBD		2
		1625-352-XX	1 PH, Audio Alarm PCBD		1
Heat Sink	Wakefield Extrusion	5088-011	#510M		3
	AAVID	62905	6063-T5 Aluminum extrusion alloy		3,4
		024562	Augmented bonded fin		4
	Newark Electronic	657-25ABP			4
Contactor	Cutler Hammer	C25DNF340A	3P, 40A		Extrap.
		C25FNF360A	3P, 60A		Extrap.
		C25FNF375A	3P, 75A		1
		XTCE225H22A	3P, 225A		2
	GE	CR353GJ3AA1	3P, 120A		4
		CR353GK3AA1	3P, 150A		3
	ABB	A95-30-00-84	3P, 90A		3
	GIGAVAC	GX11KA	150A, 750VDC		1,2
Current Sensor	LEM	LA100-P	100A		3,4
Switch	Control Switches International Inc.	N63-US10726-05	3P, 55A, 600V		3
		3N125US10726-03	3P, 125A, 600V		Interp.
		A200US10726-02	3P, 175A, 600V		4

SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENT MATRIX

2200061-CR-001-R0



Manufacturer: Crucial Power Products Model Line: Wave Rider 1 / Wave Rider 3		Table Description: Miscellaneous		TABLE 6	
Building Code: CBC 2019		Seismic Certification Limits:		$S_{DS} = 2.0g \quad z/h = 1.0$ $S_{DS} = 3.0g \quad z/h = 0.0$	
Component Type	Manufacturer	Model	Description	Notes	UUT
Rectifier Diode	Int. Rectifier	IRKD91/14	91A		3, 4
	Semikron	SKKD 100/16 G6	91A		3, 4
	Powerex	CD411699B	91A, 1800V		3, 4
		CD411699C			3, 4
Diode Bridge	Multicom	MCCM3508-RH	35A, 800VDC		3, 4
	Collmer Semiconductor	KBPC35-04	35AMP, 400VDC		1, 2
	General Semiconductor	GBPC35-04	35AMP, 400VDC		1, 2
SCR	Semikron	SKKT 92/12E	95A		3
		SKKT 132/12E	132A		4
LCD Display	OPTREX	C-51847NFJ-SLW-AEN	4.5-5.5V, 98.5mm x 61mm x 15.6mm		3
	Panasonic	AIG05GQ02D	24VDC, 3.6W, 73mm x 38.4mm		4
Inductor	OnLine Power Inc.	1450-1470-01	55A, 200uH, 120-277VAC		3
		1450-1470-02	75A, 200uH, 120-277VAC		Interp.
		1450-1470-03	90A, 200uH, 120-277VAC		2
		1450-1470-04	125A, 200uH, 120-277VAC		Interp.
		1450-1472-01	55A, 500uH, 80-240VDC		Interp.
		1450-1472-02	75A, 350uH, 80-240VDC		3
		1450-1472-03	90A, 350uH, 80-240VDC		2
		1450-1522	125A, 500uH, 12-15Hz, 125A		4
RM & UPS Management Sys	MEGATEC	BT505	Netagent II, 3 ports		2
		DP532	Netagent Mini		4

TRU Compliance, by Structural Integrity Associates, Inc.

844-TRU-0200 | info@trucompliance.com

SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENT MATRIX

2200061-CR-001-R0



Manufacturer: Crucial Power Products Model Line: Wave Rider 1 / Wave Rider 3		Table Description: Miscellaneous		TABLE 6	
Building Code: CBC 2019		Seismic Certification Limits:		$S_{DS} = 2.0 g \quad z/h = 1.0$ $S_{DS} = 3.0 g \quad z/h = 0.0$	
				$I_p = 1.5$	
Component Type	Manufacturer	Model	Description	Notes	UUT
Capacitor	FJ Enterprise	606R330A4T	60mFD, 330VAC, 60Hz		3
		406R660A4T	40mFD, 600VAC, 60Hz		4
		156R370A4T	15mFD, 370VAC, 60Hz		3, 4
Terminal Block	Mersen	MPDB63153	600V, 175A		3
		MPDB63193	600V, 135A		Interp.
		MPDB63150	600V, 135A		Interp.
		MPDB67003	600V, 310A		Interp.
		MPDB67000	600V, 310A		Interp.
		MPDB67023	600V, 350A		3
		MPDB67423	600V, 310A		4
	Weidmuller	WDU35	690V, 109A		1
		WPE35	Ground, 12-2 AWG		1
IGBT	Fuji	2MBI150TA-060	150A, 600V		1
		2MBI200TE-060	200A, 600V		3
		2MBI300TE-060	300A, 600V		2
	Semikron	SKM400GB	400A, 1200V		4
Power Supply	TDK-Lambda	ZPT4051212N	+5V, +12V, -12V		4
Fan	Mechatronics	UF15KC12BTH	115VAC, 38W, 60Hz		1-4
TVSS	Mersen	ST2083PYG	120/208VAC, 3-phase wye		3
		ST4803PYG	277/480VAC, 3-phase wye		4
		STP1201PGM	120V		Interp.
		STP2771PGM	277V		Interp.
		STP240SPGM	208/240V		1

UNIT UNDER TEST (UUT) SUMMARY SHEET



2200061-CR-001-R0

Manufacturer: Crucial Power Products	UUT 1
Model Line: Wave Rider 1 / Wave Rider 3	
Model Number: SV-PW8.0A0100T1 Serial Number: N/A	

Product Construction Summary:
Base & Top: 12 GA. carbon steel, **Back & Sides:** 14 GA. carbon steel, **Doors:** 16 GA. carbon steel.
 Cabinet type A.

Options/Subcomponent Summary:
Lead Acid batteries: 12V 95 Ah; 12V 330W **Breakers:** Cutler Hammer: (ED) 125 & 200A; (QC) 30, 50, & 100A; (GHC) 15 & 25A| ABB: TS 60A

<i>UUT Properties</i>						
Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
1,795	18.0	39.0	68.0	17.3	12.7	19.1

<i>UUT Highest Passed Seismic Run Information</i>									
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 2019	ICC-ES AC156	2.0	1.0	1.5	3.20	2.40	2.00	0.80	
		3.0	0.0						

Test Mounting Details:



The UUT was rigid base mounted to the table using (6) 5/8" Grade 8 bolts.
 Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.
 Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET



2200061-CR-001-R0

Manufacturer: Crucial Power Products	UUT 2
Model Line: Wave Rider 1 / Wave Rider 3	
Model Number: SV-PW017R1100T1 Serial Number: N/A	

Product Construction Summary:
Base & Top: 12 GA. carbon steel, **Back & Sides:** 14 GA. carbon steel, **Doors:** 16 GA. carbon steel.
 Cabinet type B

Options/Subcomponent Summary:
Lead Acid batteries: 12V, 285-270WPC; 12V, 106 Ah **Transformers:** 200VA, Cu windings, 120-277V in, 120V out; 20kVA, Cu windings, 208-277V in, 208-277V out; 20kVA, Cu windings, 480V in, 240/277V out **Breakers:** Cutler Hammer: (GHC) 100A| ABB: 125 & 200A

<i>UUT Properties</i>						
Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
4,512	30.5	51.0	70.0	9.5	12.0	22.0

<i>UUT Highest Passed Seismic Run Information</i>									
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 2019	ICC-ESAC156	2.0	1.0	1.5	3.20	2.40	2.00	0.80	
		3.0	0.0						

Test Mounting Details:



The UUT was rigid base mounted to the table using (12) 5/8" Grade 8 bolts.
 Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.
 Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET



2200061-CR-001-R0

Manufacturer: Crucial Power Products	UUT 3
Model Line: Wave Rider 1 / Wave Rider 3	
Model Number: SV-PW010B05LHT3-VA Serial Number: N/A	

Product Construction Summary:
Base & Top: 12 GA. carbon steel, **Back & Sides:** 14 GA. carbon steel, **Doors:** 16 GA. carbon steel.

Options/Subcomponent Summary:
Transformers: 130VA, Cu windings, 208-480V in, 120V out; 15kVA, Cu windings, 158V in, 120V out; 23kVA, Cu windings, 120V in, 127-220V out **Breakers:** Cutler Hammer: (QC) 35 & 100A; (GHC) 40 & 100A| ABB: 90A

UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
1,083	18.0	39.0	68.0	23.1	12.4	20.0

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 2019	ICC-ES AC156	2.0	1.0	1.5	3.20	2.40	2.00	0.80
		3.0	0.0					

Test Mounting Details:



The UUT was rigid base mounted to the table using (6) 5/8" Grade 8 bolts.
 Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.
 Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET



2200061-CR-001-R0

Manufacturer: Crucial Power Products	UUT 4
Model Line: Wave Rider 1 / Wave Rider 3	
Model Number: SV-PW050H09LHT3-KW Serial Number: N/A	

Product Construction Summary:
Base & Top: 12 GA. carbon steel, **Back & Sides:** 14 GA. carbon steel, **Doors:** 16 GA. carbon steel.

Options/Subcomponent Summary:
Transformers: 70kVA, Cu windings, 277V in, 307-532V out; 70kVA, Cu windings, 396V in, 277V out; **Breakers:** Cutler Hammer: (ED) 175A; (GHC) 80A; (EGE) 20 & 100A| ABB: 90 & 200A

<i>UUT Properties</i>						
Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
2,565	18.0	39.0	68.0	20.3	11.2	21.5

<i>UUT Highest Passed Seismic Run Information</i>									
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 2019	ICC-ES AC156	2.0	1.0	1.5	3.20	2.40	2.00	0.80	
		3.0	0.0						

Test Mounting Details:



The UUT was rigid base mounted to the table using (6) 5/8" Grade 8 bolts.
 Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.
 Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET



2200061-CR-001-R0

Manufacturer: Crucial Power Products	UUT 5
Model Line: Wave Rider 1 / Wave Rider 3	
Model Number: 51 Inch Battery Cabinet Serial Number: N/A	

Product Construction Summary:
Base & Top: 12 GA. carbon steel, **Back & Sides:** 14 GA. carbon steel, **Doors:** 16 GA. carbon steel.

Options/Subcomponent Summary:
Lead Acid batteries: 12V, 550-521WPC; 12V, 100Ah; 12V, 175Ah; 12V, 750 WPC; 12V, 540W **Breakers:** ABB: 100A

UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
4,320	30.5	51.0	70.0	9.4	8.5	8.9

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 2019	ICC-ESAC156	2.0	1.0	1.5	3.20	2.40	2.00	0.80
		3.0	0.0					

Test Mounting Details:



The UUT was rigid base mounted to the table using (12) 5/8" Grade 8 bolts.
 Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.
 Contents were included in testing per operating conditions.