



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

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

OFFICE USE ONLY

**APPLICATION #: OSP-0720**

**HCAI Special Seismic Certification Preapproval (OSP)**

Type:  New  Renewal

**Manufacturer Information**

Manufacturer: C&C Power

Manufacturer's Technical Representative: James Lupinek

Mailing Address: 395 Mission Street, Carol Stream, IL 60188

Telephone: (630) 617-9022

Email: jlupinek@ccpower.com

**Product Information**

Product Name: UPS and Batteries

Product Type: UPS

Product Model Number: BC43, BC55, UBC80, UBC40

General Description: VRLA Energy Storage Battery Cabinets

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: Dynamic Certification Laboratories, LLC.

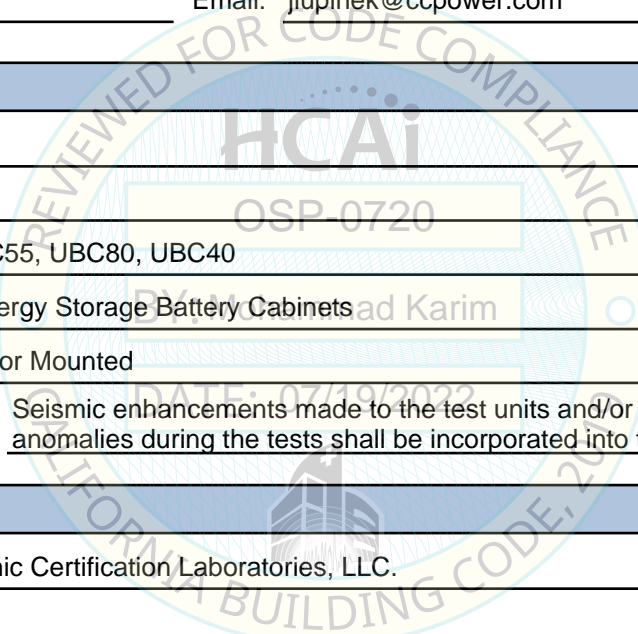
Contact Person: Kelly Laplace

Mailing Address: 1315 Greg St. Suite 109, Sparks, NV 89431

Telephone: (775) 358-5085

Email: kelly@shaketest.com

Title: Business Manager





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

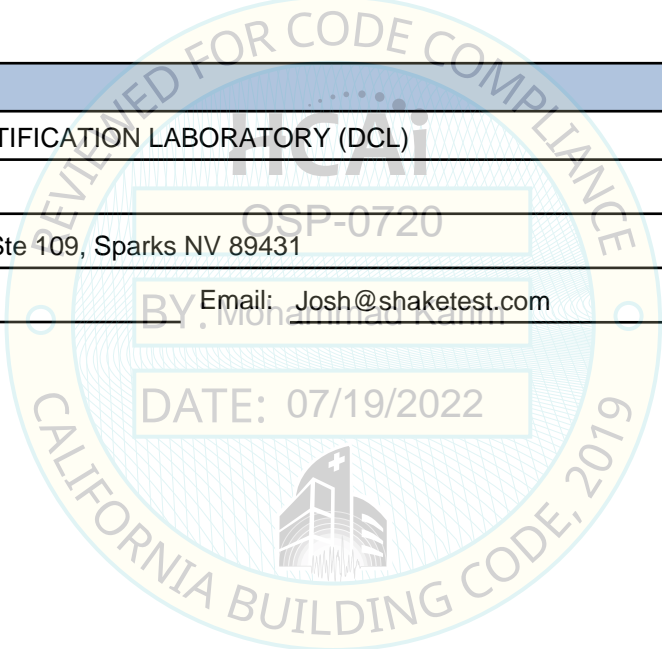
Company Name: THE VMC GROUP  
Name: Kenneth Tarlow California License Number: S2851  
Mailing Address: 980 9th Street, 16th Floor, Sacramento, CA 95814  
Telephone: (832) 627-2214 Email: ken.tarlow@thevmcgroup.com

**Certification Method**

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

**Testing Laboratory**

Company Name: DYNAMIC CERTIFICATION LABORATORY (DCL)  
Contact Person: Josh Sailer  
Mailing Address: 1315 Greg St., Ste 109, Sparks NV 89431  
Telephone: (775) 358-5085 Email: Josh@shaketest.com





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**Seismic Parameters**

Design Basis of Equipment or Components ( $F_p/W_p$ ) = 1.44

SDS (Design spectral response acceleration at short period, g) = 2.0

$a_p$  (Amplification factor) = 1.0

$R_p$  (Response modification factor) = 2.5

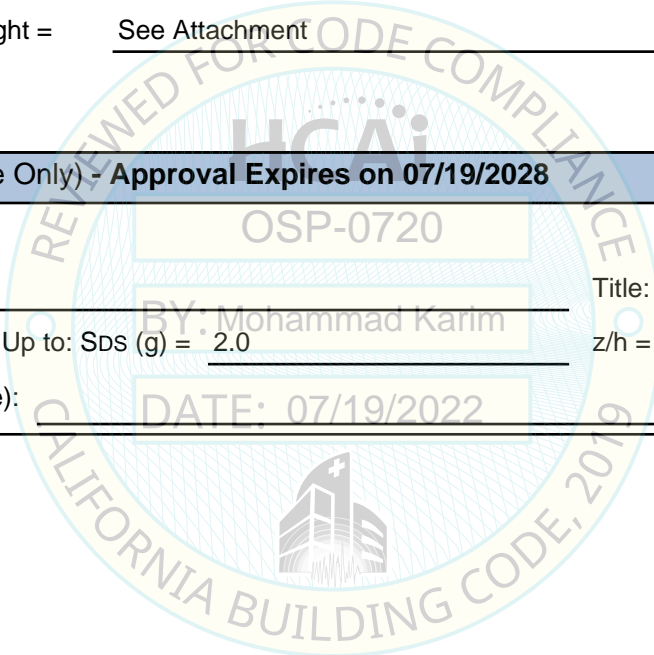
$\Omega_0$  (System overstrength factor) = 2.0

$I_p$  (Importance factor) = 1.5

$z/h$  (Height ratio factor) = 1

Natural frequencies (Hz) = See Attachment

Overall dimensions and weight = See Attachment



**HCAI Approval (For Office Use Only) - Approval Expires on 07/19/2028**

Date: 7/19/2022

Name: Mohammad Karim Title: Supervisor, Health Facilities

Special Seismic Certification Valid Up to: SDS (g) = 2.0 z/h = 1

Condition of Approval (if applicable): DATE: 07/19/2022



# Special Seismic Certification

## Table 1 - Certified Components



DCL Project Number: 51697-2001

**Manufacturer:** C&C Power, Inc.  
**Product Type:** Battery Cabinet  
**Product Line:** BC and UBC Battery Cabinets  
**Mounting Configuration:** Rigid Base Mounted  
**Test Levels:**  $S_{DS} = 2.0g$ ,  $z/h=1.0$

Cabinet Type	Model Number <sup>1</sup>	Construction Material	NEMA Rating	Max. Dimensions (in)			Max. Weight (lb.)	Unit
				Depth	Width	Height		
BC43	43C1xxxx-D4801Qxxx00AH1xx	Powder Coated Carbon Steel	1	29.5	36.0	78.7	4,400	UUT1
BC43	43C1xxxx-D4801xxxx20XH1xx	Powder Coated Carbon Steel	1	29.5	36.0	78.7	4,560	UUT5
BC43	43xxxxxxxxxxxxxxxxxxxxH1xx	Powder Coated Carbon Steel	1	29.5	36.0	78.7	4,980	Interpolated
BC55	55C1xxxx-D4801Dxxx00AH1xx	Powder Coated Carbon Steel	1	29.5	40.0	78.7	4,910	UUT2
BC55	55xxxxxxxxxxxxxxxxxxxxH1xx	Powder Coated Carbon Steel	1	29.5	40.0	78.7	5,024	Interpolated
UBC40	U4C1xxxx-D2401Sxxx00AH1xx	Powder Coated Carbon Steel	1	30.5	31.5	78.7	2,920	UUT3
UBC40	U4xxxxxxxxxxxxxxxxxxxxH1xx	Powder Coated Carbon Steel	1	30.5	31.5	78.7	3,025	Interpolated
UBC80	X8C1xxxx-D4801Gxxx02HH1xx	Powder Coated Carbon Steel	1	35.6	46.5	84.0	7,030	UUT4
UBC80	X8xxxxxxxxxxxxxxxxxxxxH1xx	Powder Coated Carbon Steel	1	35.6	46.5	84.0	7,150	Interpolated

1. The variable "x" denotes different options as described in the Nomenclature Charts in Tables 2 and 3. For the tested units, different batteries were tested; therefore a distinct model number cannot be associated with the actual tested units since they utilize multiple battery types.

2. The max weight for the interpolated units assumes each cabinet type uses all the heaviest subcomponents whereas a combination was tested to bookend all possible combinations.

**Special Seismic Certification**  
**Table 2 - Certified Options - Nomenclature Chart**



DCL Project Number: 51697-2001

Manufacturer: C & C Power, Inc.  
 Product Line: BC and UBC Battery Cabinets  
 Seismic Levels: S<sub>D5</sub> = 2.0g, z/h=1.0

**Sample Model Number**

55 C 1 E 540 - D 480 1 E 600 1 1 H H 1 QB  
 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17

Character	Category	Allowable Value	Description	Unit
1	Enclosure Type	43	BC43 Battery Cabinet Enclosure	UUT1, UUT5
		55	BC55 Battery Cabinet Enclosure	UUT2
		U4	UBC40 Battery Cabinet Enclosure	UUT3
		X8	UBC80 Battery Cabinet Enclosure	UUT4
2	Customer Code	A	Identifier for the buying customer.	Extrapolated
		C		UUT1-UUT5
		B-Z		Extrapolated
3	String Quantity	1	Number of strings inside a single battery cabinet. Does not exceed total # of batteries	UUT1-UUT5
4	Battery Manufacturer	E	Enersys	UUT1-UUT5
		U	Deka	UUT1-UUT5
		S	CSB	UUT1, UUT2, UUT5
5	Battery Model Number			
	Enersys HX	205	12HX205	Extrapolated
		300	12HX300	Extrapolated
		330	12HX330	Extrapolated
		400	12HX400	Extrapolated
		505	12HX505	UUT1
	540	12HX540	UUT2, UUT5	
	Enersys XE Front Access	XF0	12XE1010F-FR	UUT3
		XF1	12XE1110F-FR	Extrapolated
		XF2	12XE1150F-FR	UUT4
	Deka HR	200	45HR2000	Extrapolated
		H30	HR3000	Extrapolated
		H35	HR3500	Extrapolated
		H40	HR4000	Extrapolated
		500	31HR5000	UUT1
		H55	HR5500	UUT2
	Deka HRC	X95	HRC950	UUT5
	Deka HR Front Access	F35	HR3500ET	Extrapolated
		F55	HR5500ET	UUT3
		F75	HR7500ET	UUT4
	Deka HT Front Access	17H	HT170ET	UUT3
		20H	HT200ET	Extrapolated
		H75	HT7500ET	UUT4
	CSB HRL	200	HRL12200W	Extrapolated
		280	HRL12280W	Extrapolated
		330	HRL12330W	Extrapolated
		390	HRL12390W	UUT1
		540	HRL12540W	UUT2
CSB XPL	X22	XPL2200	Extrapolated	
	X27	XPL2700	Extrapolated	
	X35	XPL3500	Extrapolated	
	X42	XPL4200	Extrapolated	
	X47	XPL4700	Extrapolated	
	X57	XPL5700	UUT5	
	X67	XPL6700	UUT2	
6	Battery Supplier / Installer	-	Supplied & Installed by C&C Power	UUT1-UUT5
		X	Supplied by others & Installed by C&C Power	Extrapolated
7	Lug Size	C	#10 or M5 Bolt	Extrapolated
		D	1/4" or M6 Bolt	UUT1-UUT5
8	Bus Voltage	120 - 432	Total voltage when a string of batteries are wired together in series.	UUT3
		480		UUT1-2 & UUT4-5

**Special Seismic Certification**  
**Table 2 - Certified Options - Nomenclature Chart (Continued)**



DCL Project Number: 51697-2001

Manufacturer: C & C Power, Inc.  
 Product Line: BC and UBC Battery Cabinets  
 Seismic Levels:  $S_{DS} = 2.0g, z/h=1.0$

Sample Model Number				
$\frac{55}{1}$ $\frac{C}{2}$ $\frac{1}{3}$ $\frac{E}{4}$ $\frac{540}{5}$ $\frac{-}{6}$ $\frac{D}{7}$ $\frac{480}{8}$ $\frac{1}{9}$ $\frac{E}{10}$ $\frac{600}{11}$ $\frac{1}{12}$ $\frac{1}{13}$ $\frac{H}{14}$ $\frac{H}{15}$ $\frac{1}{16}$ $\frac{QB}{17}$				
Character	Category	Allowable Value	Description	Unit
9	Breaker Quantity	1	The number of breakers inside a single battery cabinet. Typically 1 per cabinet but multiple may be used if there are multiple smaller strings inside a single battery cabinet.	UUT1-UUT5
10	Breaker Type	D	Square-D with Rotary Handle Extension	UUT2
		E	Eaton / Cutler-Hammer Breaker	UUT5
		G	Eaton / Cutler-Hammer Breaker with Rotary Handle Extension	UUT4
		Q	Square-D Breaker	UUT1
		S	Siemens	UUT5, UUT3
11	Breaker Amperage	070-250	Ranges from 070-800A	UUT1, UUT5
		250-800		UUT2, UUT3, UUT4
12	Auxiliary Contacts for Breaker	0	NONE	UUT1-UUT4
		1	Single Aux Contact	Interpolated
		2	Dual Aux Contacts	UUT5
13	Bell Alarm for Breaker	0	NONE	UUT1, UUT2, UUT3, UUT5
		1	Single Bell Alarm	Interpolated
		2	Dual Bell Alarm	UUT4
14	Under Voltage Relay or Shunt Trip for Breakers	A	NONE	UUT1, UUT2, UUT3
		B	120VAC UV Trip	Interpolated
		C	208VAC UV Trip	Interpolated
		D	240VAC UV Trip	Interpolated
		E	277VAC UV Trip	Interpolated
		F	480VAC UV Trip	Interpolated
		G	600VAC UV Trip	Interpolated
		H	24VDC UV Trip	UUT4
		J	48VDC UV Trip	Interpolated
		K	125VDC UV Trip	Interpolated
		L	250VDC UV Trip	Interpolated
		M	24VAC Shunt Trip	Interpolated
		N	48VAC Shunt Trip	Interpolated
		P	120VAC Shunt Trip	Interpolated
		Q	208VAC Shunt Trip	Interpolated
		R	240VAC Shunt Trip	Interpolated
		S	277VAC Shunt Trip	Interpolated
		T	480VAC Shunt Trip	Interpolated
		U	600VAC Shunt Trip	Interpolated
		V	12VDC Shunt Trip	Interpolated
W	24VDC Shunt Trip	Interpolated		
X	48VDC Shunt Trip	UUT5		
Y	125VDC Shunt Trip	Interpolated		
Z	250VDC Shunt Trip	Interpolated		
15	Certification Code	H	HCAI	UUT1-UUT5
		J	HCAI and IFC Compliance	Extrapolated
16	Cabinet Quantity	1 to 9	The number of cabinets in a multi-cabinet system. Cabinets remain structurally independent but model number calls out cabinet quantity as it correlates with the application.	UUT1-UUT5
17	Color Code	##	Color the enclosure is painted. Matches customer specification. Any 2-character alpha numeric combination to represent a specific color.	UUT1-UUT5



**Special Seismic Certification**

**Table 4 - Certified Subcomponents- Enclosures and Batteries**



DCL Project Number: 51697-2001

**Mounting Configuration:** Rigid Base Mounted  
**Product Type:** Battery Cabinet  
**Product Line:** BC and UBC Battery Cabinets  
**Test Levels:** S<sub>ps</sub> = 2.0g, z/h=1.0

Enclosures							
Model Number	Manufacturer	NEMA Rating	Description	Construction	Material	Weight (lb.)	UUT
BC43 Enclosure	C & C Power Inc.	1	Top Terminal Battery Cabinet	Welded	Powder- Coated Carbon Steel	488	UUT1, UUT5
BC55 Enclosure	C & C Power Inc.	1	Top Terminal Battery Cabinet	Welded	Powder- Coated Carbon Steel	520	UUT2
UBC40 Enclosure	C & C Power Inc.	1	Front Terminal Battery Cabinet	Welded	Powder- Coated Carbon Steel	450	UUT3
UBC80 Enclosure	C & C Power Inc.	1	Front Terminal Battery Cabinet	Welded	Powder- Coated Carbon Steel	1,000	UUT4
Top Terminal Batteries (12 VDC VRLA Batteries)							
Model Number	Manufacturer	Description	Material	Weight (lb.)	UUT		
12HX205	Energys	ENERSYS DataSafe HX Top Terminal	Plastic, Lead, and Brass	43	Extrapolated		
12HX300	Energys	ENERSYS DataSafe HX Top Terminal	Plastic, Lead, and Brass	60	Extrapolated		
12HX330	Energys	ENERSYS DataSafe HX Top Terminal	Plastic, Lead, and Brass	71	Extrapolated		
12HX400	Energys	ENERSYS DataSafe HX Top Terminal	Plastic, Lead, and Brass	80	Extrapolated		
12HX505	Energys	ENERSYS DataSafe HX Top Terminal	Plastic, Lead, and Brass	103	UUT1, UUT5		
12HX540	Energys	ENERSYS DataSafe HX Top Terminal	Plastic, Lead, and Brass	106	UUT2		
45HR2000	EAST PENN Manufacturing Co. Inc.	DEKA UNIGY HR	Plastic, Lead, and Brass	40	Extrapolated		
HR3000	EAST PENN Manufacturing Co. Inc.	DEKA UNIGY HR	Plastic, Lead, and Brass	62	Extrapolated		
HR3500	EAST PENN Manufacturing Co. Inc.	DEKA UNIGY HR	Plastic, Lead, and Brass	72	Extrapolated		
HR4000	EAST PENN Manufacturing Co. Inc.	DEKA UNIGY HR	Plastic, Lead, and Brass	81	Extrapolated		
31HR5000	EAST PENN Manufacturing Co. Inc.	DEKA UNIGY HR	Plastic, Lead, and Brass	97	UUT1		
HR5500	EAST PENN Manufacturing Co. Inc.	DEKA UNIGY HR	Plastic, Lead, and Brass	105	UUT2		
HRC950	EAST PENN Manufacturing Co. Inc.	DEKA UNIGY HRC	Plastic, Lead, and Brass	93	UUT5		
HRL12200W	Hitachi Chemical Energy Technology Co. Ltd.	CSB HRL	Plastic, Lead, and Brass	38	Extrapolated		
HRL12280W	Hitachi Chemical Energy Technology Co. Ltd.	CSB HRL	Plastic, Lead, and Brass	57	Extrapolated		
HRL12330W	Hitachi Chemical Energy Technology Co. Ltd.	CSB HRL	Plastic, Lead, and Brass	65	Extrapolated		
HRL12390W	Hitachi Chemical Energy Technology Co. Ltd.	CSB HRL	Plastic, Lead, and Brass	73	UUT1		
HRL12540W	Hitachi Chemical Energy Technology Co. Ltd.	CSB HRL	Plastic, Lead, and Brass	97	UUT2		
XPL2200	Hitachi Chemical Energy Technology Co. Ltd.	CSB XPL	Plastic, Lead, and Brass	36	Extrapolated		
XPL2700	Hitachi Chemical Energy Technology Co. Ltd.	CSB XPL	Plastic, Lead, and Brass	40	Extrapolated		
XPL3500	Hitachi Chemical Energy Technology Co. Ltd.	CSB XPL	Plastic, Lead, and Brass	57	Extrapolated		
XPL4200	Hitachi Chemical Energy Technology Co. Ltd.	CSB XPL	Plastic, Lead, and Brass	62	Extrapolated		
XPL4700	Hitachi Chemical Energy Technology Co. Ltd.	CSB XPL	Plastic, Lead, and Brass	71	Extrapolated		
XPL5700	Hitachi Chemical Energy Technology Co. Ltd.	CSB XPL	Plastic, Lead, and Brass	80	UUT5		
XPL6700	Hitachi Chemical Energy Technology Co. Ltd.	CSB XPL	Plastic, Lead, and Brass	104	UUT2		
Front Terminal Batteries (12 VDC VRLA Batteries)							
Model Number	Manufacturer	Description	Material	Weight (lb.)	UUT		
HR3500ET	EAST PENN Manufacturing Co. Inc.	DEKA HR Front Access	Plastic, Lead, and Brass	76	Extrapolated		
HR5500ET	EAST PENN Manufacturing Co. Inc.	DEKA HR Front Access	Plastic, Lead, and Brass	115	UUT3		
HR7500ET	EAST PENN Manufacturing Co. Inc.	DEKA HR Front Access	Plastic, Lead, and Brass	150	UUT4		
HT170ET	EAST PENN Manufacturing Co. Inc.	DEKA HT Front Access	Plastic, Lead, and Brass	118	UUT3		
HT200ET	EAST PENN Manufacturing Co. Inc.	DEKA HT Front Access	Plastic, Lead, and Brass	151	Interpolated		
HT7500ET	EAST PENN Manufacturing Co. Inc.	DEKA HT Front Access	Plastic, Lead, and Brass	151	UUT4		
12XE1010F-FR	Energys	ENERSYS XE Front Access	Plastic, Lead, and Brass	107	UUT3		
12XE1110F-FR	Energys	ENERSYS XE Front Access	Plastic, Lead, and Brass	114	Interpolated		
12XE1150F-FR	Energys	ENERSYS XE Front Access	Plastic, Lead, and Brass	129	UUT4		

**Special Seismic Certification**  
**Table 5 - Certified Subcomponents- Circuit Breakers and Circuit Breaker Accessories**



DCL Project Number: 51697-2001

**Mounting Configuration:** Rigid Base Mounted  
**Product Type:** Battery Cabinet  
**Product Line:** BC and UBC Battery Cabinets  
**Test Levels:** S<sub>DS</sub> = 2.0g, z/h=1.0

Circuit Breakers					
Model Number	Manufacturer	Model	Material	Weight (lb.)	UUT
JGEDC3250NN	Eaton / Cutler Hammer	70A-250A G Circuit Breaker	Plastic, Steel, and Copper	6	UUT5
LGEDC3630NN	Eaton / Cutler Hammer	250A-600A G Circuit Breaker	Plastic, Steel, and Copper	12	Interpolated
LGEDC3630NNCC	Eaton / Cutler Hammer	250A-600A G Circuit Breaker	Plastic, Steel, and Copper	12	Interpolated <sup>1</sup>
HMDLDC3800F	Eaton / Cutler Hammer	300A-800A G Circuit Breaker	Plastic, Steel, and Copper	24	UUT4
JGL37250D82	Schneider Electric	150A-250A PowerPact Circuit Breaker	Plastic, Steel, and Copper	4	UUT1
LLL37060D33	Schneider Electric	250A-600A PowerPact Circuit Breaker	Plastic, Steel, and Copper	14	UUT2
3VA5210-5EC31-0AA0	Siemens	100A 3VA Circuit Breaker	Plastic, Steel, and Copper	5	Interpolated
3VA5215-5EC31-0AA0	Siemens	150A 3VA Circuit Breaker	Plastic, Steel, and Copper	5	UUT5
3VA5217-5EC31-0AA0	Siemens	175A 3VA Circuit Breaker	Plastic, Steel, and Copper	5	Interpolated
3VA5220-5EC31-0AA0	Siemens	200A 3VA Circuit Breaker	Plastic, Steel, and Copper	5	Interpolated
3VA5225-5EC31-0AA0	Siemens	250A 3VA Circuit Breaker	Plastic, Steel, and Copper	5	Interpolated
3VA5330-5EC31-0AA0	Siemens	300A 3VA Circuit Breaker	Plastic, Steel, and Copper	12	Interpolated
3VA5335-5EC31-0AA0	Siemens	350A 3VA Circuit Breaker	Plastic, Steel, and Copper	12	Interpolated
3VA5340-5EC31-0AA0	Siemens	400A 3VA Circuit Breaker	Plastic, Steel, and Copper	12	Interpolated
3VA5450-5EC31-0AA0	Siemens	500A 3VA Circuit Breaker	Plastic, Steel, and Copper	12	Interpolated
3VA5460-5EC31-0AA0	Siemens	600A 3VA Circuit Breaker	Plastic, Steel, and Copper	12	Interpolated
3VA5570-5EC32-0AA0	Siemens	700A 3VA Circuit Breaker	Plastic, Steel, and Copper	30	Interpolated
3VA5580-5EC32-0AA0	Siemens	800A 3VA Circuit Breaker	Plastic, Steel, and Copper	30	UUT3

1. LGEDC3630NNCC is identical to the LGEDC3630NN circuit breaker, just with C&C Power logo added to it.

Circuit Breaker Accessories						
Accessory Type	Model Number	Manufacturer	Description	Material	Weight (lb.)	UUT
Auxiliary Switches	ALM1M1BJPK	Eaton / Cutler Hammer	G JG & LG Frame Alarm Lockout 1	Plastic, Steel, and Copper	< 1 lb	UUT4
	ALM2M2BJPK	Eaton / Cutler Hammer	G JG & LG Frame Alarm Lockout 2	Plastic, Steel, and Copper	< 1 lb	UUT4
	AUX1A1BPK	Eaton / Cutler Hammer	G EG, JG, & LG Frame Auxiliary Switch 1A/1B	Plastic, Steel, and Copper	< 1 lb	UUT5
	AUX2A2BPK	Eaton / Cutler Hammer	G EG, JG, & LG Frame Auxiliary Switch 2A/2B	Plastic, Steel, and Copper	< 1 lb	UUT5
Shunt Trips	SNT4860CPK	Eaton / Cutler Hammer	G EG, JG, & LG Frame Shunt Trip	Plastic, Steel, and Copper	< 1 lb	UUT5
Undervoltage Releases	UVR024DPK	Eaton / Cutler Hammer	G EG, JG, & LG Frame Undervoltage Release	Plastic, Steel, and Copper	< 1 lb	UUT4
	S32603	Schneider Electric	PowerPact LG Rotary Handle	Plastic, Steel, and Copper	2	UUT2
Rotary Handles	HM7R16	Eaton / Cutler Hammer	G M Rotary Handle - 16 INCH	Plastic, Steel, and Copper	6	UUT4



**Special Seismic Certification**  
**Table 6 - Tested Units**

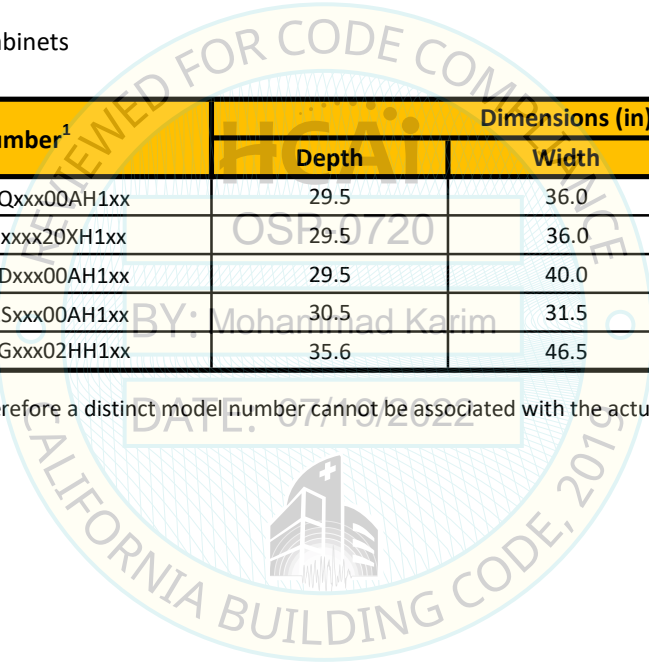


DCL Project Number: 51697-2001

**Mounting Configuration:** Rigid Base Mounted  
**Manufacturer:** C&C Power, Inc.  
**Product Type:** Battery Cabinet  
**Product Line:** BC and UBC Battery Cabinets  
**Test Levels:**  $S_{DS} = 2.0g$ ,  $z/h=1.0$

Cabinet Type	Model Number <sup>1</sup>	Dimensions (in)			Weight (lb.)	Unit
		Depth	Width	Height		
BC43	43C1xxxx-D4801Qxxx00AH1xx	29.5	36.0	78.7	4,400	UUT1
BC43	43C1xxxx-D4801xxxx20XH1xx	29.5	36.0	78.7	4,560	UUT5
BC55	55C1xxxx-D4801Dxxx00AH1xx	29.5	40.0	78.7	4,910	UUT2
UBC40	U4C1xxxx-D2401Sxxx00AH1xx	30.5	31.5	78.7	2,920	UUT3
UBC80	X8C1xxxx-D4801Gxxx02HH1xx	35.6	46.5	84.0	7,030	UUT4

1. For the tested units, different batteries were tested; therefore a distinct model number cannot be associated with the actual tested units since they utilize multiple battery types.



# UNIT UNDER TEST (UUT)

## Summary Sheet

### UUT-01



**DCL Project Number: 57079-2201**

**Manufacturer:** C & C Power Inc.

**Product Line:** BC Battery Cabinets

**Model Number:** 43C1xxxx-D4801Qxxx00AH1xx

**Mounting:** Rigid Base Mount

**Product Construction Summary:** Powder Coated Carbon Steel

**Options / Component Summary:**

Enclosures; Top Terminal Batteries (12 VDC VRLA Batteries); Circuit Breakers

**Unit Mounting Description:**

UUT-01 was rigid base mounted to the test fixture using (6) 5/8" Grade 8 bolts, round washers, and 3"x3"x3/8" low carbon steel plate washers in manufacturer-provided holes. The bolts were spaced 16.31" and 32.25" on center in the width direction and 19.5" on center in the depth direction. The bolts were torqued down to 125 ft-lbs.

**UUT Properties**

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
4,400	29.5	36.0	78.7	10.0	5.5	>33.3

**Seismic Test Parameters**

Building Code	Test Criteria	Sds (g)	z/h	Ip	Afix-H (g)	Arig-H (g)	Afix-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.0	1.0	1.5	3.20	2.40	1.34	0.54



**Figure 1.** Overall view of UUT-01

**Note:** The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.

# UNIT UNDER TEST (UUT)

## Summary Sheet

### UUT-02



**DCL Project Number: 57079-2201**

**Manufacturer:** C & C Power Inc.

**Product Line:** BC Battery Cabinets

**Model Number:** 55C1xxxx-D4801Dxxx00AH1xx

**Mounting:** Rigid Base Mount

**Product Construction Summary:** Powder Coated Carbon Steel

**Options / Component Summary:**

Enclosures; Top Terminal Batteries (12 VDC VRLA Batteries); Circuit Breakers; Circuit Breaker Accessories

**Unit Mounting Description:**

UUT-02 was rigid base mounted to the test fixture using (6) 5/8" Grade 8 bolts, round washers, and 3"x3"x3/8" low carbon steel plate washers in manufacturer-provided holes. The bolts were spaced 16.3" and 36.3" on center in the width direction and 19.5" on center in the depth direction. The bolts were torqued down to 125 ft-lbs.

#### UUT Properties

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
4,910	29.5	40.0	78.7	8.0	7.0	>33.3

#### Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Afix-H (g)	Arig-H (g)	Afix-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.0	1.0	1.5	3.20	2.40	1.34	0.54



**Figure 1.** Overall view of UUT-02

**Note:** The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.

# UNIT UNDER TEST (UUT) Summary Sheet



## UUT-03

**DCL Project Number: 57079-2201**

**Manufacturer:** C & C Power Inc.

**Product Line:** UBC Battery Cabinets

**Model Number:** U4C1xxxx-D2401Sxxx00AH1xx

**Mounting:** Rigid Base Mount

**Product Construction Summary:** Powder Coated Carbon Steel

**Options / Component Summary:**

Enclosures; Front Terminal Batteries (12 VDC VRLA Batteries); Circuit Breaker

**Unit Mounting Description:**

UUT-03 was rigid base mounted to the test fixture using (4) 5/8" Grade 5 bolts, round washers, and 2"x2"x1/4" low carbon steel plate washers in manufacturer-provided holes. The bolts were spaced 27.1" on center in the width direction and 27.3" on center in the depth direction. The bolts were torqued down to 125 ft-lbs.

**UUT Properties**

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
2,920	30.5	31.5	78.7	8.0	16.5	>33.3

**Seismic Test Parameters**

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.0	1.0	1.5	3.20	2.40	1.34	0.54



**Figure 1.** Overall view of UUT-03

**Note:** The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.



# UNIT UNDER TEST (UUT) Summary Sheet



## UUT-04

**DCL Project Number: 57079-2201**

**Manufacturer:** C & C Power Inc.

**Product Line:** UBC Battery Cabinets

**Model Number:** X8C1xxxx-D4801Gxxx02HH1xx

**Mounting:** Rigid Base Mount

**Product Construction Summary:** Powder Coated Carbon Steel

**Options / Component Summary:**

Enclosures; Front Terminal Batteries (12 VDC VRLA Batteries); Circuit Breakers; Circuit Breaker Accessories

**Unit Mounting Description:**

UUT-04 was rigid base mounted to the test fixture using (8) 5/8" Grade 8 bolts, round washers, and 3"x3"x3/8" low carbon steel plate washers in manufacturer-provided holes. The bolts were spaced 21.56" and 43.12" on center in the width direction and 16.58" and 31.16" on center in the depth direction. The bolts were torqued down to 125 ft-lbs.

**UUT Properties**

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
7,030	35.6	46.5	84.0	10.5	7.5	24.5

**Seismic Test Parameters**

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.0	1.0	1.5	3.20	2.40	1.34	0.54



**Figure 1.** Overall view of UUT-04

**Note:** The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.

# UNIT UNDER TEST (UUT)

## Summary Sheet

### UUT-05



**DCL Project Number: 57079-2201**

**Manufacturer:** C & C Power Inc.

**Product Line:** BC Battery Cabinets

**Model Number:** 43C1xxxx-D4801xxxx20XH1xx

**Mounting:** Rigid Base Mount

**Product Construction Summary:** Powder Coated Carbon Steel

**Options / Component Summary:**

Enclosures; Top Terminal Batteries (12 VDC VRLA Batteries); Circuit Breakers; Circuit Breaker Accessories

**Unit Mounting Description:**

UUT-05 was rigid base mounted to the test fixture using (6) 5/8" Grade 8 bolts, round washers, and 3"x3"x3/8" low carbon steel plate washers in manufacturer-provided holes. The bolts were spaced 16.31" and 32.25" on center in the width direction and 19.5" on center in the depth direction. The bolts were torqued down to 125 ft-lbs.

**UUT Properties**

Operating Weight (lb)	Dimensions (inches) -0720			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
4,560	29.5	36.0	78.7	10.0	7.0	>33.3

**Seismic Test Parameters**

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.0	1.0	1.5	3.20	2.40	1.34	0.54



**Figure 1.** Overall view of UUT-05

**Note:** The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.