



## APPLICATION FOR PREAPPROVAL SPECIAL SEISMIC CERTIFICATION OF EQUIPMENT AND COMPONENTS

*For Office Use Only*

<b>APPLICATION NO.</b>
<b>OSP-0285-10</b>

Check whether application is: NEW  RENEWAL

<b>1.0</b>	Emerson Network Power	Bret Fox
	<i>Manufacturer</i>	<i>Manufacturer's Technical Representative</i>
	975 Pittsburgh Drive, Delaware, OH 43015	
	<i>Mailing Address</i>	

	(740) 833-8509	Bret.Fox@emerson.com
	<i>Telephone</i>	<i>E-mail Address</i>

<b>2.0</b>	Liebert NXL	Uninterruptable Power Supply; Battery Cabinet; Maintenance Bypass Cabinet; Junction Cabinet
	<i>Product Name</i>	<i>Product Type</i>

*Refer to Table 1A, 1B, and 1C (attached)*

*Product model No (List all unique product identification numbers and/or serial numbers)*

*General Description: This product line includes uninterruptable power supplies (UPS), battery cabinets, maintenance bypass cabinets, and junction cabinets. All units include side panels except as noted in attached product matrix. Units are valid for hard-mount to floor structure only. This OSP is not valid with snubbers or isolators. All modifications made to the test units and required to address anomalies observed during the test shall be incorporated into the production models.*

<b>3.0</b>	Emerson Network Power	Bret Fox
	<i>Applicant Company Name</i>	<i>Contact Person</i>
	975 Pittsburg Drive, Delaware, OH 43015	
	<i>Mailing Address</i>	
	(740) 833-8509	Bret.Fox@emerson.com
	<i>Telephone</i>	<i>E-mail Address</i>

I hereby agree to reimburse the Office of Statewide Health Planning and Development for the actual costs incurred by the department for review.

*Signature of Applicant*

6/26/2012

*Date*

Product Engineer  
*Title*

Emerson Network Power  
*Company Name*



**Registered Design Professional Preparing the Report**

4.0 Buehler & Buehler Structural Engineers, Inc.  
*Company Name*

Ryan Miller, P.E., S.E. C70940; S5556  
*Contact Name* *California License Number*

600 Q Street, Suite 200, Sacramento, CA 95811  
*Mailing Address*

(916) 443-0303 rmiller@bbse.com  
*Telephone* *E-mail Address*

**California Licensed Structural Engineer Review and Acceptance of the Report**

5.0 Buehler & Buehler Structural Engineers, Inc.  
*Company Name*

Scott Hooker, S.E. S3937  
*Contact Name* *California License Number*

600 Q Street, Suite 200, Sacramento, CA 95811  
*Mailing Address*

(916) 443-0303 shooker@bbse.com  
*Telephone* *E-mail Address*

**Anchorage Pre-Approval**

6.0  Anchorage is pre-approved under OPA-  
 (Separate application for anchorage pre-approval is required)

Anchorage is not Pre-approved

**Certification Method**

7.0  Testing in accordance with:  ICC-ES AC-156  Other (Please Specify):

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Analysis

Experience data

Combination of Testing, Analysis, and/or Experience Data (Please Specify):

**Testing Laboratory (if applicable)**

8.0 U.S. Army ERDC CERL Jim Wilcoski  
*Company Name* *Contact Name*

2902 Newmark Drive, Champaign, IL 61826  
*Mailing Address*

(217) 373-6763 James.Wilcoski@usace.army.mil  
*Telephone* *E-mail:*



**Testing Laboratory (if applicable) ~ con't**

<b>8.0 con't</b>	<i>QualTech NP</i>	<i>Marie Nemier</i>
	<i>Company Name</i>	<i>Contact Name</i>
	<i>4600 East tech Drive, Cincinnati, OH 45245</i>	
	<i>Mailing Address</i>	
	<i>(513) 528-7900</i>	<i>mnemier@curtisswright.com</i>
	<i>Telephone</i>	<i>E-mail:</i>



**Approval Parameters**

9.0

Design in accordance with ASCE 7-05 Chapter 13:  Yes  No

Design Basis of Equipment or Components ( $F_p/W_p$ ) =  $0.72 * S_{DS}$

$S_{DS}$  (Spectral response acceleration at short period) = Refer to Table 1A, 1B, and 1C

$a_p$  (In-structure equipment or component amplification factor) = 1.0

$R_p$  (Equipment or component response modification factor) = 2.5

$I_p$  (Importance factor) = 1.5

$z/h$  (Height factor ratio) = 1.0

Equipment or Component fundamental period(s) = Refer to Table 3

Building period limits (if any) = N/A

Overall dimensions and weight (or range thereof) = Refer to Table 1A, 1B, and 1C

Equipment or Components @ grade designed in accordance with ASCE 7-05 Chapter 15:  Yes  No

Design Basis of Equipment or Components ( $V/W$ ) =

$S_{DS}$  (Spectral response acceleration at short period) =

$S_1$  (Spectral response acceleration at 1 second period) =

$R$  (Response modification coefficient) = 1.0

$\Omega_0$  (System overstrength factor) = 1.0

$C_d$  (Deflection amplification factor) = 1.0

$I_p$  (Importance factor) = 1.5

Height to Center of Gravity above base =

Equipment or Component fundamental period(s) =      Sec

Overall dimensions and weight (or range thereof) =

Tank(s) designed in accordance with ASME BPVC, 2007:  Yes  No

**10.0 List of attachments supporting the special seismic certification of equipment or components:**

- Test Report
- Drawings
- Manufacturer's Catalog
- Calculations
- Others (Please Specify): Operability Test Witness Letters

**11.0 OSHPD Approval (For Office Use Only)**

11/14/12

December 31, 2016

Signature & Date

Approval Expiration Date

**M. R. Karim, SHFR**

$S_{DS}$  (g) = **See Section 9.0**  $z/h = 1.0$

Name & Title

Special Seismic Certification Valid Up to

Condition of Approval (if any):



Special Seismic Certification  
OSHPD Preapproval  
Liebert NXL UPS Systems



**Table 1A. Certified Models and Configurations - UPS**

Liebert NXL

Model Number	Description	Type	Input Voltage <sup>1</sup>	Tested/ Interpolated	Enclosure Type <sup>3</sup>	Width (in)	Depth (in)	Height (in)	Maximum Weight (lbs)	Sds	z/h
<b>40SN25A</b>	<b>250kVA UPS</b>	<b>1+N</b>	<b>480V</b>	<b>UUT-1</b>	<b>Cold formed carbon steel; NEMA-1</b>	<b>71.8</b>	<b>33.5</b>	<b>76.8</b>	<b>4,040</b>	<b>2.10</b>	<b>0.57</b>
40SA25A	250kVA UPS	SMS	480V	Interpolated	Cold formed carbon steel; NEMA-1	71.8	33.5	76.8	3,965	2.10	0.57
40SR25A	250kVA UPS	1+1	480V	Interpolated	Cold formed carbon steel; NEMA-1	71.8	33.5	76.8	3,965	2.10	0.57
40SA30A	300kVA UPS	SMS	480V	Interpolated	Cold formed carbon steel; NEMA-1	78.5	33.5	76.8	4,840	2.10	0.57
40SN30A	300kVA UPS	1+N	480V	Interpolated	Cold formed carbon steel; NEMA-1	78.5	33.5	76.8	4,915	2.10	0.57
40SR30A	300kVA UPS	1+1	480V	Interpolated	Cold formed carbon steel; NEMA-1	78.5	33.5	76.8	4,840	2.10	0.57
40SA40A	400kVA UPS	SMS	480V	Interpolated	Cold formed carbon steel; NEMA-1	78.5	39.4	76.8	6,280	2.10	0.57
40SN40A	400kVA UPS	1+N	480V	Interpolated	Cold formed carbon steel; NEMA-1	78.5	39.4	76.8	6,380	2.10	0.57
40SR40A	400kVA UPS	1+1	480V	Interpolated	Cold formed carbon steel; NEMA-1	78.5	39.4	76.8	6,280	2.10	0.57
40SA50M	500kVA UPS	SMS	480V	Interpolated	Cold formed carbon steel; NEMA-1	111.6	39.4	76.8	10,310	2.10	0.57
40SN50M	500kVA UPS	1+N	480V	Interpolated	Cold formed carbon steel; NEMA-1	111.6	39.4	76.8	10,410	2.10	0.57
40SR50M	500kVA UPS	1+1	480V	Interpolated	Cold formed carbon steel; NEMA-1	111.6	39.4	76.8	10,310	2.10	0.57
40MM50M	500kVA UPS	N+1	480V	Interpolated	Cold formed carbon steel; NEMA-1	111.6	39.4	76.8	10,210	2.10	0.57
40SA62M	625kVA UPS	SMS	480V	Interpolated	Cold formed carbon steel; NEMA-1	140.5	39.4	76.8	13,650	2.10	0.57
40SN62M	625kVA UPS	1+N	480V	Interpolated	Cold formed carbon steel; NEMA-1	140.5	39.4	76.8	13,800	2.10	0.57
40SR62M	625kVA UPS	1+1	480V	Interpolated	Cold formed carbon steel; NEMA-1	140.5	39.4	76.8	13,650	2.10	0.57
40MM62M	625kVA UPS	N+1	480V	Interpolated	Cold formed carbon steel; NEMA-1	125.0	39.4	76.8	13,100	2.10	0.57
40SA75M	750kVA UPS	SMS	480V	Interpolated	Cold formed carbon steel; NEMA-1	140.5	39.4	76.8	13,650	2.10	0.57
<b>40SN75M</b>	<b>750kVA UPS</b>	<b>1+N</b>	<b>480V</b>	<b>UUT-3</b>	<b>Cold formed carbon steel; NEMA-1</b>	<b>140.5</b>	<b>39.4</b>	<b>76.8</b>	<b>13,800</b>	<b>2.10</b>	<b>0.57</b>
40SR75M	750kVA UPS	1+1	480V	Interpolated	Cold formed carbon steel; NEMA-1	140.5	39.4	76.8	13,650	2.10	0.57
40MM75M	750kVA UPS	N+1	480V	Interpolated	Cold formed carbon steel; NEMA-1	125.0	39.4	76.8	13,100	2.10	0.57
40SA80M	800kVA UPS	SMS	480V	Interpolated	Cold formed carbon steel; NEMA-1	183.5	47.2	78.7	16,120	2.10	0.57
40SN80M	800kVA UPS	1+N	480V	Interpolated	Cold formed carbon steel; NEMA-1	183.5	47.2	78.7	16,370	2.10	0.57
40SR80M	800kVA UPS	1+1	480V	Interpolated	Cold formed carbon steel; NEMA-1	183.5	47.2	78.7	16,120	2.10	0.57
40MM80M	800kVA UPS	N+1	480V	Interpolated	Cold formed carbon steel; NEMA-1	152.7	47.2	78.7	14,720	2.10	0.57
<b>40SA11M</b>	<b>1100kVA UPS</b>	<b>SMS</b>	<b>480V</b>	<b>UUT-4</b>	<b>Cold formed carbon steel; NEMA-1</b>	<b>228.3</b>	<b>47.2</b>	<b>78.7</b>	<b>21,450</b>	<b>2.10</b>	<b>0.57</b>
40SN11M	1100kVA UPS	1+N	480V	Interpolated	Cold formed carbon steel; NEMA-1	228.3	47.2	78.7	21800 <sup>2</sup>	2.10	0.57
40SR11M	1100kVA UPS	1+1	480V	Interpolated	Cold formed carbon steel; NEMA-1	228.3	47.2	78.7	21,450	2.10	0.57
40MM11M	1100kVA UPS	N+1	480V	Interpolated	Cold formed carbon steel; NEMA-1	197.5	47.2	78.7	20,050	2.10	0.57
40SA12M	1125kVA UPS	SMS	480V	Interpolated	Cold formed carbon steel; NEMA-1	228.3	47.2	78.7	21,450	2.10	0.57
40SN12M	1125kVA UPS	1+N	480V	Interpolated	Cold formed carbon steel; NEMA-1	228.3	47.2	78.7	21800 <sup>2</sup>	2.10	0.57
40SR12M	1125kVA UPS	1+1	480V	Interpolated	Cold formed carbon steel; NEMA-1	197.5	47.2	78.7	21,450	2.10	0.57
40MM12M	1125kVA UPS	N+1	480V	Interpolated	Cold formed carbon steel; NEMA-1	228.3	47.2	78.7	20,050	2.10	0.57

**Types:**  
 SMS = Single Module System  
 1+N - Distributed Static Switch System  
 N+1 = Centralized Static Switch System  
 1+1 = redundant distributed static switch

**Notes:**  
 1. Output voltage is 480V  
 2. Weight difference from SMS version due to share inductor, which is tested in the UUT-1 and UUT-3.  
 3. Enclosure manufactured by Emerson Network Power



Special Seismic Certification  
OSHPD Preapproval  
Liebert NXL UPS Systems



**Table 1B. Certified Models and Configurations - Maintenance Bypass and Junction Cabinets**

Liebert NXL

<i>Model Number</i>	<i>Description</i>	<i>Tested/ Interpolated</i>	<i>Width (in)</i>	<i>Enclosure Type <sup>1</sup></i>	<i>Depth (in)</i>	<i>Height (in)</i>	<i>Maximum Weight (lbs)</i>	<i>Sds</i>	<i>z/h</i>
<b>38MB250 40MB250</b>	<b>250kVA Maintenance Bypass Cabinet</b>	<b>UUT-7</b>	<b>25.6</b>	<b>Cold formed carbon steel; NEMA-1</b>	<b>33.5</b>	<b>76.8</b>	<b>755</b>	<b>2.50</b>	<b>0.61</b>
38MB300 40MB300	300kVA Maintenance Bypass Cabinet	Interpolated	25.6	Cold formed carbon steel; NEMA-1	33.5	76.8	755	2.50	0.61
38MB400 40MB400	400kVA Maintenance Bypass Cabinet	Interpolated	25.6	Cold formed carbon steel; NEMA-1	39.4	76.8	755	2.50	0.61
<b>38MB500 40MB500</b>	<b>500kVA Maintenance Bypass Cabinet</b>	<b>UUT-8</b>	<b>25.6</b>	<b>Cold formed carbon steel; NEMA-1</b>	<b>39.4</b>	<b>76.8</b>	<b>755</b>	<b>2.50</b>	<b>0.61</b>
<b>38JCXXXNC 40JCXXXNC</b>	<b>12V Narrow Junction Cabinet</b>	<b>UUT-9</b>	<b>15.5</b>	<b>Cold formed carbon steel; NEMA-1</b>	<b>33.5</b>	<b>76.8</b>	<b>255</b>	<b>2.15</b>	<b>0.55</b>
<b>38JCXXXPC 40JCXXXPC</b>	<b>16V Narrow Junction Cabinet</b>	<b>UUT-10</b>	<b>17.5</b>	<b>Cold formed carbon steel; NEMA-1</b>	<b>33.5</b>	<b>76.8</b>	<b>255</b>	<b>2.05</b>	<b>0.57</b>
<b>38JCXXXNS 40JCXXXNS</b>	<b>Wide Junction Cabinet</b>	<b>UUT-2</b>	<b>32.1</b>	<b>Cold formed carbon steel; NEMA-1</b>	<b>33.5</b>	<b>76.8</b>	<b>400</b>	<b>2.00</b>	<b>0.93</b>

Notes:

1. Enclosure manufactured by Emerson Network Power



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Liebert NXL UPS Systems



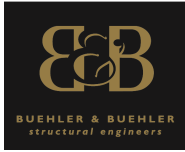
**Table 1C. Certified Models and Configurations - Battery Cabinet**

Liebert NXL

Model Number	Description	Type	Tested/ Interpolated	Enclosure Type <sup>1</sup>	Width (in)	Depth (in)	Height (in)	Maximum Weight (lbs)	Sds	z/h
38BXXXX 40BXXXX	12V Top Terminal Battery Cabinet	UPS12-300MR	UUT-5	Cold formed carbon steel; NEMA-1	56.1	33.5	76.8	5,500 max	2.15	0.55
38BXXXX 40BXXXX	12V Top Terminal Battery Cabinet	UPS12-350MR	Interpolated	Cold formed carbon steel; NEMA-1	56.1	33.5	76.8	5,500 max	2.15	0.55
38BXXXX 40BXXXX	12V Top Terminal Battery Cabinet	UPS12-400MR	Interpolated	Cold formed carbon steel; NEMA-1	56.1	33.5	76.8	5,500 max	2.15	0.55
38BXXXX 40BXXXX	12V Top Terminal Battery Cabinet	UPS12-490MRLP	Interpolated	Cold formed carbon steel; NEMA-1	56.1	33.5	76.8	5,500 max	2.15	0.55
38BXXXX 40BXXXX	12V Top Terminal Battery Cabinet	UPS12-540MR	UUT-5	Cold formed carbon steel; NEMA-1	56.1	33.5	76.8	5,500 max	2.15	0.55
38BXXXX 40BXXXX	12V Top Terminal Battery Cabinet	HX300-FR	UUT-5	Cold formed carbon steel; NEMA-1	56.1	33.5	76.8	5,500 max	2.15	0.55
38BXXXX 40BXXXX	12V Top Terminal Battery Cabinet	HX330-FR	Interpolated	Cold formed carbon steel; NEMA-1	56.1	33.5	76.8	5,500 max	2.15	0.55
38BXXXX 40BXXXX	12V Top Terminal Battery Cabinet	HX400-FR	Interpolated	Cold formed carbon steel; NEMA-1	56.1	33.5	76.8	5,500 max	2.15	0.55
38BXXXX 40BXXXX	12V Top Terminal Battery Cabinet	HX505-FR	Interpolated	Cold formed carbon steel; NEMA-1	56.1	33.5	76.8	5,500 max	2.15	0.55
38BXXXX 40BXXXX	12V Top Terminal Battery Cabinet	HX540-FR	UUT-5	Cold formed carbon steel; NEMA-1	56.1	33.5	76.8	5,500 max	2.15	0.55
38BXXXX 40BXXXX	12V Top Terminal Battery Cabinet	24HR3000	UUT-5	Cold formed carbon steel; NEMA-1	56.1	33.5	76.8	5,500 max	2.15	0.55
38BXXXX 40BXXXX	12V Top Terminal Battery Cabinet	27HR3500	Interpolated	Cold formed carbon steel; NEMA-1	56.1	33.5	76.8	5,500 max	2.15	0.55
38BXXXX 40BXXXX	12V Top Terminal Battery Cabinet	31HR4000	Interpolated	Cold formed carbon steel; NEMA-1	56.1	33.5	76.8	5,500 max	2.15	0.55
38BXXXX 40BXXXX	12V Top Terminal Battery Cabinet	31HR5000	UUT-5	Cold formed carbon steel; NEMA-1	56.1	33.5	76.8	5,500 max	2.15	0.55
38BXXXX 40BXXXX	16V Front Terminal Battery Cabinet	16HX800F	UUT-6	Cold formed carbon steel; NEMA-1	63	33.5	76.8	8,990 max	2.05	0.57
38BXXXX 40BXXXX	16V Front Terminal Battery Cabinet	16HX925F	UUT-6	Cold formed carbon steel; NEMA-1	63	33.5	76.8	8,990 max	2.05	0.57

Notes:

1. Enclosure manufactured by Emerson Network Power



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**Table 2. Certified Subcomponents**

**Liebert NXL**

<b>Fan &amp; Motor Assembly</b>				
<b>Material</b>	<b>Description</b>	<b>Manufacturer</b>	<b>Part No.</b>	<b>Included in Test</b>
Plastic: Frame + Impeller; Ball Bearing	Fan, 230V, 225MM	EBM_PAPST	R2E225-BD92-62	UUT-1, 3, 4
Plastic: Frame + Impeller; Ball Bearing	FAN AXIAL 100MM W/SENSOR	EBM_PAPST	4656ZH-10	UUT-1

<b>Transformer</b>				
<b>Material</b>	<b>Description</b>	<b>Manufacturer</b>	<b>Part No.</b>	<b>Included in Test</b>
Carbon Steel/Copper	480V Output Transformer (Tout)	Emerson	530937G1	UUT-1
Carbon Steel/Copper	480V Input Transformer (Tin)	Emerson	02-817835-00	UUT-3
Carbon Steel/Copper	480V Output Transformer (Tout)	Emerson	537154G1	UUT-3
Carbon Steel/Copper	480V Input Transformer (Tin)	Emerson	544424G1	UUT-4
Carbon Steel/Copper	480V Output Transformer (Tout)	Emerson	542988G1	UUT-4
Carbon Steel/Copper	Motor Op Supply Transformer (T3)	Emerson	545343G1	UUT-4
Carbon Steel/Copper	Motor Op Supply Transformer (T4)	Emerson	12-817816-00	UUT-1,3
Carbon Steel/Copper	Fan Supply Transformers (T1-T2)	Emerson	12-749052-00	UUT-4
Carbon Steel/Copper	Fan Supply Transformers (T1-T3)	Emerson	12-817916-00	UUT-1,3





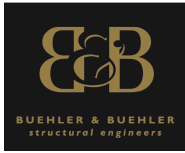
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**Table 2. Certified Subcomponents ~ cont'd**

Liebert NXL

<b>Capacitor</b>				
<b>Material</b>	<b>Description</b>	<b>Manufacturer</b>	<b>Part No.</b>	<b>Included in Test</b>
Metal/Electrolytic	480V AC Input Trap Filter Capacitors	Epcos	B3236	UUT-1, 3
Metal/Electrolytic	AC Input Trap Filter Capacitors	Epcos	B32362	UUT-4
Metal/Electrolytic	AC Output Filter Capacitors	Epcos	B32362	UUT-1, 3, 4
Metal/Electrolytic	DC Capacitors	Epcos	B43458	UUT-1, 4
Metal/Electrolytic	DC Capacitors	Epcos	B4357	UUT-3
Metal/Electrolytic	Grass AC Output Filter Capacitors	Epcos	B32362	UUT-3, 4
Metal/Electrolytic	Grass AC Output Filter Capacitors	Epcos	B3234	UUT-1



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Liebert NXL UPS Systems



**Table 2. Certified Subcomponents ~ cont'd**

Liebert NXL

<i>Inductor</i>				
<i>Material</i>	<i>Description</i>	<i>Manufacturer</i>	<i>Part No.</i>	<i>Included in Test</i>
Carbon Steel/Copper	480V AC Input Choke (LIN)	Emerson	02-817838-00	UUT-3
Carbon Steel/Copper	480V AC Input Choke (LIN)	Emerson	539441G1	UUT-1
Carbon Steel/Copper	480V AC Input Choke (LIN)	Emerson	542987G1	UUT-4
Carbon Steel/Copper	Bypass Inductor (LbypA, LbypB, LbypC)	Emerson	536201G1	UUT-1
Carbon Steel/Copper	480V Bypass Inductor (LbypA, LbypB, LbypC)	Emerson	531637G1	UUT-3
Carbon Steel/Copper	Rectifier Series Inductors (LR0. LR1)	Emerson	02-817836-00	UUT-3
Carbon Steel/Copper	Rectifier Series Inductors (LR0. LR1)	Emerson	527104G1	UUT-1
Carbon Steel/Copper	Rectifier Series Inductors (LR0. LR1)	Emerson	544990G1	UUT-4
Carbon Steel/Copper	Trap Inductors (LTA1, LTB1, LTC1)	Emerson	534568G1	UUT-3
Carbon Steel/Copper	Trap Inductors (LTA1, LTB1, LTC1)	Emerson	527106G1	UUT-1
Carbon Steel/Copper	Trap Inductors (LTA1, LTB1, LTC1)	Emerson	542991G1	UUT-4
Carbon Steel/Copper	Trap Inductors (LTA2, LTB2, LTC2)	Emerson	534576G1	UUT-3
Carbon Steel/Copper	Trap Inductors (LTA2, LTB2, LTC2)	Emerson	542992G1	UUT-4



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**Table 2. Certified Subcomponents ~ cont'd**

Liebert NXL

<b>Circuit Breaker</b>				
<b>Material</b>	<b>Description</b>	<b>Manufacturer</b>	<b>Part No.</b>	<b>Included in Test</b>
Molded Plastic	CB 3P 0400BD FM2A1BUV--	Siemens	LJX3R400MA5UCX5	UUT-1
Molded Plastic	CB 3P 1200B5 FM2A2BUV----	Siemens	LNx3R120MA4UCX5	UUT-3
Molded Plastic	CB 3P 2000C6 FM4C--UV-----	ABB	543318P6	UUT-4
Molded Plastic	CB 3P 0400B3 FS1A2BUV--	Siemens	LJX3R400MA6UCV5	UUT-1
Molded Plastic	CB 3P 1200B5 FE2A2BUV----	Siemens	LNx3R120MA4UCM5	UUT-3
Molded Plastic	CB 3P 2000C6 FE4C--UV-----	ABB	543321P6	UUT-4
Molded Plastic	CB 3P 2000C6 FM4C--ST-----	ABB	543322P4	UUT-4
Molded Plastic	CB 3P 0400B3 FM2A1BST----	Siemens	LJX3R400MA5RCX5	UUT-1
Molded Plastic	CB 3P 1200B5 FM2A2BST----	Siemens	LNx3R120MA4RCX5	UUT-3
Molded Plastic	CB 3P 0400DF FM2C----- MTP540	Square D	MHF3640026DC1286	UUT-5
Molded Plastic	CB 3P 0600DF FM2C--UV-- MTP810	Square D	MHF3660030DC1680	UUT-5
Molded Plastic	CB 3P 0700DF FM2C--UV-- MTP945	Square D	MHF3670032DC1680	UUT-6
Molded Plastic	CB 3P 0900D5 FM2C--UV---- 1350	Square D	542592P6	UUT-6
Molded Plastic	CB 3P 0400BE FM2A1BST--	Siemens	LJX3B400MA5RNX6	UUT-7
Molded Plastic	CB 3P 0800BE FM2A2BST--	Siemens	LMX3B800MA4RNX6	UUT-8



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**Table 2. Certified Subcomponents ~ cont'd**

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<b>Battery</b>					
<b>Catalog Option No.</b>	<b>Material</b>	<b>Description</b>	<b>Manufacturer</b>	<b>Part No.</b>	<b>Included in Test</b>
530873P1	Lead-Acid	UPS12-300MR	C&D Technologies	UPS12-300MR	UUT-5
530874P1	Lead-Acid	UPS12-350MR	C&D Technologies	UPS12-350MR	Interpolated
530875P1	Lead-Acid	UPS12-400MR	C&D Technologies	UPS12-400MR	Interpolated
536685P1	Lead-Acid	UPS12-490MRLP	C&D Technologies	UPS12-490MRLP	Interpolated
530877P1	Lead-Acid	UPS12-540MR	C&D Technologies	UPS12-540MR	UUT-5
523124P1	Lead-Acid	HX300-FR	Energys Inc	HX300-FR	UUT-5
523172P1	Lead-Acid	HX330-FR	Energys Inc	HX330-FR	Interpolated
523123P1	Lead-Acid	HX400-FR	Energys Inc	HX400-FR	Interpolated
523122P1	Lead-Acid	HX505-FR	Energys Inc	HX505-FR	Interpolated
536877P1	Lead-Acid	HX540-FR	Energys Inc	HX540-FR	UUT-5
542396P1	Lead-Acid	16HX800F	Energys Inc	16HX800F	UUT-6
535526P1	Lead-Acid	16HX925F	Energys Inc	16HX925F	UUT-6
525765P3	Lead-Acid	24HR3000	East Penn	24HR3000	UUT-5
525765P5	Lead-Acid	27HR3500	East Penn	27HR3500	Interpolated
525765P4	Lead-Acid	31HR4000	East Penn	31HR4000	Interpolated
525765P1	Lead-Acid	31HR5000	East Penn	31HR5000	UUT-5



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**Table 2. Certified Subcomponents ~ cont'd**

**Liebert NXL**

<b>Miscellaneous</b>					
<b>Sub-component</b>	<b>Material</b>	<b>Description</b>	<b>Manufacturer</b>	<b>Part No.</b>	<b>Included in Test</b>
Fuse	Not specified	Fuse, 550A, 700V	Cooper Bussman	545230P1	UUT-1, 3, 4
Air Filter	Aluminum/ Polypropolene	High flow Air filter	Emerson	N/A	UUT-1, 3, 4
Battery Motor Op Interface	Not specified	Fuse, 15A, 600V	Cooper Bussman	NXLMBDMO	UUT-1, 3
Emergency Module Off	Plastic	Push Button	Omron	NXLEMO	UUT-1
Optional Power Supply	Laminate PWB + Metal Housing	Power Supply, 1.6A, 24Vdc	Computer Products	NXLPOW	UUT-1, 3, 4
Power Tie Interface	Laminate PWB + Metal Housing	PWB, Interface with Power-Tie system	Benchmark Electronics	NXLPTINFC	UUT-1
Input Contact Isolator Board	Laminate PWB + Metal Housing	Dry Contact card	Benchmark Electronics	NXLICI	UUT-1, 3, 4
Relay Card	Laminate PWB + Metal Plate	Relay Communication Card	Benchmark Electronics	NXLPRB	UUT-1, 3, 4
485/ModBus Card	Laminate PWB + Metal Plate	OpenComms 485 Communication Card	Benchmark Electronics	IS-485NXL	UUT-1, 3
Intellislot Card	Laminate PWB + Metal Plate	SiteLink Communications Cad	Benchmark Electronics	IS-485NXI	UUT-1, 3
Web Card	Laminate PWB + Metal Plate	Web Communication Card	Benchmark Electronics	IS-WEBNXL	UUT-1, 3
Solenoid Key Release	Copper/Carbon Steel	Solenoid Key Rel w/2 1-in lkg	Kirk Key Interlock	531347P1	UUT-7, 8
Temperature Sensor	Copper/plastic/metal	Battery cabinetTemperature sensor	Thermo O-Disc	NTN103J.2	UUT-5, 6
Temperature Sensor	Copper/plastic/metal	Alber Temperature sensor	RDF Corp	29354	UUT-5
Terminal Strip	Plastic	Term Strip, 12-position	Connectron	K-12	UUT-5, 6
Current Transducer	Copper/Plastic	0-600A DC	Ohio Semitronics Inc	CTG-601FSY60	UUT-5, 6
Wiring Harness - Alber	Copper cable	Wiring Harness	Emerson	532172G1	UUT-5, 6
Alber Data Collection	Laminate PWB + Metal Plate	Alber Data Collector unit	Alber	1003-801A0CRE	UUT-5, 6
Alber Controller Module	Laminate PWB + Metal Plate	Alber Controller Module	Alber	1002-800C62E	UUT-5, 6
Housing / Side Panels	Steel Cold Rolled 18ga	Panel, Side, Painted 7021	Emerson	526056P1	UUT-1, 2, 5, 6, 7, 9, 10
Housing / Side Panels	Steel Cold Rolled 18ga	Panel, Side, Painted 7021	Emerson	526057P1	UUT-3, 8
Housing / Side Panels	Steel Cold Rolled 18ga	Panel, Side, Painted 7021	Emerson	526056P1	UUT-4



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**Table 3. Summary of Tested Units** <sup>5,6</sup>

**Liebert NXL**

Model Number	Description	UUT Mark	Excitation Direction <sup>4</sup>	Frequency (Hz)	Width (in)	Depth (in)	Height (in)	Maximum Weight (lbs)	A <sub>FLX-H</sub>	A <sub>RIG-H</sub>	A <sub>FLEX-V</sub>	A <sub>RIG-V</sub>	S <sub>ds</sub>	z/h
40SN25A	250kVA UPS	UUT-1 <sup>1</sup>	X	8.6	71.8	33.5	76.8	4,040	3.74	2.81	1.56	0.62	2.34	1.00
			Y	8.0										
			Z	-										
40SN75M	750kVA UPS	UUT-3 <sup>3</sup>	X	7.5	140.5	39.4	76.8	13,800	3.36	1.80	1.40	0.56	2.10	0.57
			Y	5.0										
			Z	18.0										
40SA11M	1100kVA UPS	UUT-4 <sup>2</sup>	X	8.0	228.3	47.2	78.7	21,450	3.36	1.90	1.40	0.56	2.10	0.63
			Y	5.7										
			Z	14.0										
40BP750	12V Top Terminal Battery Cabinet	UUT-5 <sup>3</sup>	X	11.0	56.1	33.5	76.8	4,650 <sup>7</sup>	3.44	1.81	1.43	0.57	2.15	0.55
			Y	8.6										
			Z	23.0										
40BQ750	16V Front Terminal Battery Cabinet	UUT-6 <sup>2</sup>	X	5.4	63.0	33.5	76.8	8,650 <sup>7</sup>	3.28	1.75	1.37	0.55	2.05	0.57
			Y	7.2										
			Z	25.0										
40MB250	250kVA Maintenance Bypass Cabinet	UUT-7 <sup>3</sup>	X	7.9	25.6	33.5	76.8	755	4.00	2.22	1.67	0.67	2.50	0.61
			Y	20.0										
			Z	-										
40MB500	500kVA Maintenance Bypass Cabinet	UUT-8 <sup>3</sup>	X	9.0	25.6	39.4	76.8	755	4.00	2.22	1.67	0.67	2.50	0.61
			Y	20.0										
			Z	-										
40JC500NC	12V Narrow Junction Cabinet	UUT-9 <sup>3</sup>	X	11.0	15.5	33.5	76.8	255	3.44	1.81	1.43	0.57	2.15	0.55
			Y	8.0										
			Z	-										
40JC11UPC	16V Narrow Junction Cabinet	UUT-10 <sup>2</sup>	X	5.4	17.5	33.5	76.8	255	3.28	1.75	1.37	0.55	2.05	0.57
			Y	7.3										
			Z	25.0										
40JC11UNS	Wide Junction Cabinet	UUT-2 <sup>1,8</sup>	X	11.9	32.1	33.5	76.8	400	3.20	2.29	1.33	0.53	2.00	0.93
			Y	10.8										
			Z	15.3										

**Notes**

1. Test performed 10/4/2011 through 10/5/2011 at QualTech Laboratory in Cincinnati, OH (Report #Q1148.1 Rev 4)
2. Test performed 3/26/2012 through 3/30/2012 at U.S. Army ERDC CERL in Champaign, IL (Report #S10-294.00)
3. Test performed 4/30/2012 through 5/3/2012 at U.S. Army ERDC CERL in Champaign, IL (Report #S10-294.00)
4. Excitation Direction: X = side-side; Y = front-back; Z = vertical
5. All units tested with included side panels, except as noted in 8
6. All units are hard-mounted at the base.
7. Weight based on actual test unit, measured in lab.
8. UUT-2 tested with front and rear panels only (left and right sides omitted).



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**Table 4. Summary of Tested Unit Subcomponents**  
**Liebert NXL**

	<b>Sub-Component</b>	<b>Material</b>	<b>Description</b>	<b>Manufacturer</b>	<b>Part No.</b>
UUT-1 250kVA UPS	Fan	Plastic: Frame + Impeller; Ball Bearing	Fan, 230V, 225MM	EBM_PAPST	R2E225-BD92-62
	Fan	Plastic: Frame + Impeller; Ball Bearing	FAN AXIAL 100MM W/SENSOR	EBM_PAPST	4656ZH-10
	Transformer	Carbon Steel/Copper	480V Output Transformer (Tou)	Emerson	530937G1
	Transformer	Carbon Steel/Copper	Motor Op Supply Transformer (T4)	Emerson	12-817816-00
	Transformer	Carbon Steel/Copper	Fan Supply Transformers (T1-T3)	Emerson	12-817916-00
	Capacitors	Metal/Electrolytic	480V AC Input Trap Filter Capacitors	Epcos	B3236
	Capacitors	Metal/Electrolytic	AC Output Filter Capacitors	Epcos	B32362
	Capacitors	Metal/Electrolytic	DC Capacitors	Epcos	B43458
	Capacitors	Metal/Electrolytic	Grass AC Output Filter Capacitors	Epcos	B3234
	Inductor	Carbon Steel/Copper	480V AC Input Choke (LIN)	Emerson	539441G1
	Inductor	Carbon Steel/Copper	Bypass Inductor (LbypA, LbypB, LbypC)	Emerson	536201G1
	Inductor	Carbon Steel/Copper	Rectifier Series Inductors (LR0, LR1)	Emerson	527104G1
	Inductor	Carbon Steel/Copper	Trap Inductors (LTA1, LTB1, LTC1)	Emerson	527106G1
	Breaker	Molded Plastic	CB 3P 0400BD FM2A1BUV--	Siemens	LJX3R400MA5UCX5
	Breaker	Molded Plastic	CB 3P 0400B3 FS1A2BUV--	Siemens	LJX3R400MA6UCV5
	Breaker	Molded Plastic	CB 3P 0400B3 FM2A1BST----	Siemens	LJX3R400MA5RCX5
	Fuse	Not specified	Fuse, 550A, 700V	Cooper Bussman	545230P1
	Air Filter	Aluminum/ Polypropolene	High flow Air filter	Emerson	N/A
	Battery Motor Op Interface	Not specified	Fuse, 15A, 600V	Cooper Bussman	NXLMBDMO
	Emergency Module Off	Plastic	Push Button	Omron	NXLEMO
	Optional Power Supply	Laminate PWB + Metal Housing	Power Supply, 1.6A, 24Vdc	Computer Products	NXLPOW
	Power Tie Interface	Laminate PWB + Metal Housing	PWB, Interface with Power-Tie system	Benchmark Electronics	NXLPTINFC
	Input Contact Isolator Board	Laminate PWB + Metal Housing	Dry Contact card	Benchmark Electronics	NXLICI
	Relay Card	Laminate PWB + Metal Plate	Relay Communication Card	Benchmark Electronics	NXLPRB
	485/ModBus Card	Laminate PWB + Metal Plate	OpenComms 485 Communication Card	Benchmark Electronics	IS-485NXL
	Intellislot Card	Laminate PWB + Metal Plate	SiteLink Communications Cad	Benchmark Electronics	IS-485NXI
Housing / Side Panels	Carbon Steel Cold Rolled 18ga	Panel, Side, Painted 7021	Emerson	526056P1	
Web Card	Laminate PWB + Metal Plate	Web Communication Card	Benchmark Electronics	IS-WEBNXL	



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**Table 4. Summary of Tested Unit Subcomponents ~ cont'd**

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	<b>Sub-Component</b>	<b>Material</b>	<b>Description</b>	<b>Manufacturer</b>	<b>Part No.</b>
UUT-3 750kVA UPS	Fan	Plastic: Frame + Impeller; Ball Bearing	Fan, 230V, 225MM	EBM_PAPST	R2E225-BD92-62
	Transformer	Carbon Steel/Copper	480V Input Transformer (Tin)	Emerson	02-817835-00
	Transformer	Carbon Steel/Copper	480V Output Transformer (Tou)	Emerson	537154G1
	Transformer	Carbon Steel/Copper	Motor Op Supply Transformer (T4)	Emerson	12-817816-00
	Transformer	Carbon Steel/Copper	Fan Supply Transformers (T1-T3)	Emerson	12-817916-00
	Capacitors	Metal/Electrolytic	480V AC Input Trap Filter Capacitors	Epcos	B3236
	Capacitors	Metal/Electrolytic	AC Output Filter Capacitors	Epcos	B32362
	Capacitors	Metal/Electrolytic	DC Capacitors	Epcos	B4357
	Capacitors	Metal/Electrolytic	Grass AC Output Filter Capacitors	Epcos	B32362
	Inductor	Carbon Steel/Copper	480V AC Input Choke (LIN)	Emerson	02-817838-00
	Inductor	Carbon Steel/Copper	480V Bypass Inductor (LbypA, LbypB, LbypC)	Emerson	531637G1
	Inductor	Carbon Steel/Copper	Rectifier Series Inductors (LR0, LR1)	Emerson	02-817836-00
	Inductor	Carbon Steel/Copper	Trap Inductors (LTA1, LTB1, LTC1)	Emerson	534568G1
	Inductor	Carbon Steel/Copper	Trap Inductors (LTA2, LTB2, LTC2)	Emerson	534576G1
	Breaker	Molded Plastic	CB 3P 1200B5 FM2A2BUV----	Siemens	LN33R120MA4UCX5
	Breaker	Molded Plastic	CB 3P 1200B5 FE2A2BUV----	Siemens	LN33R120MA4UCM5
	Breaker	Molded Plastic	CB 3P 1200B5 FM2A2BST----	Siemens	LN33R120MA4RCX5
	Fuse	Not specified	Fuse, 550A, 700V	Cooper Bussman	545230P1
	Air Filter	Aluminum/ Polypropolene	High flow Air filter	Emerson	N/A
	Battery Motor Op Interface	Not specified	Fuse, 15A, 600V	Cooper Bussman	NXLMBDMO
	Optional Power Supply	Laminate PWB + Metal Housing	Power Supply, 1.6A, 24Vdc	Computer Products	NXLPOW
Input Contact Isolator Board	Laminate PWB + Metal Housing	Dry Contact card	Benchmark Electronics	NXLICI	
Relay Card	Laminate PWB + Metal Plate	Relay Communication Card	Benchmark Electronics	NXLPRB	
485/ModBus Card	Laminate PWB + Metal Plate	OpenComms 485 Communication Card	Benchmark Electronics	IS-485NXL	
Intellislot Card	Laminate PWB + Metal Plate	SiteLink Communications Cad	Benchmark Electronics	IS-485NXI	
Web Card	Laminate PWB + Metal Plate	Web Communication Card	Benchmark Electronics	IS-WEBNXL	
Housing / Side Panels	Carbon Steel Cold Rolled 18ga	Panel, Side, Painted 7021	Emerson	526057P1	

	<b>Sub-Component</b>	<b>Material</b>	<b>Description</b>	<b>Manufacturer</b>	<b>Part No.</b>
UUT-4 1100kVA UPS	Fan	Plastic: Frame + Impeller; Ball Bearing	Fan, 230V, 225MM	EBM_PAPST	R2E225-BD92-62
	Transformer	Carbon Steel/Copper	480V Input Transformer (Tin)	Emerson	544424G1
	Transformer	Carbon Steel/Copper	480V Output Transformer (Tou)	Emerson	542988G1
	Transformer	Carbon Steel/Copper	Motor Op Supply Transformer (T3)	Emerson	545343G1
	Transformer	Carbon Steel/Copper	Fan Supply Transformers (T1-T2)	Emerson	12-749052-00
	Capacitor	Metal/Electrolytic	AC Input Trap Filter Capacitors	Epcos	B32362
	Capacitor	Metal/Electrolytic	AC Output Filter Capacitors	Epcos	B32362
	Capacitor	Metal/Electrolytic	DC Capacitors	Epcos	B43458
	Capacitor	Metal/Electrolytic	Grass AC Output Filter Capacitors	Epcos	B32362
	Inductor	Carbon Steel/Copper	480V AC Input Choke (LIN)	Emerson	542987G1
	Inductor	Carbon Steel/Copper	Rectifier Series Inductors (LR0, LR1)	Emerson	544990G1
	Inductor	Carbon Steel/Copper	Trap Inductors (LTA1, LTB1, LTC1)	Emerson	542991G1
	Inductor	Carbon Steel/Copper	Trap Inductors (LTA2, LTB2, LTC2)	Emerson	542992G1
	Breaker	Molded Plastic	CB 3P 2000C6 FM4C--UV-----	ABB	543318P6
	Breaker	Molded Plastic	CB 3P 2000C6 FE4C--UV-----	ABB	543321P6
	Breaker	Molded Plastic	CB 3P 2000C6 FM4C--ST-----	ABB	543322P4
	Fuse	Not specified	Fuse, 550A, 700V	Cooper Bussman	545230P1
	Air Filter	Aluminum/ Polypropolene	High flow Air filter	Emerson	N/A
	Optional Power Supply	Laminate PWB + Metal Housing	Power Supply, 1.6A, 24Vdc	Computer Products	NXLPOW
	Input Contact Isolator Board	Laminate PWB + Metal Housing	Dry Contact card	Benchmark Electronics	NXLICI
	Relay Card	Laminate PWB + Metal Plate	Relay Communication Card	Benchmark Electronics	NXLPRB
Housing / Side Panels	Carbon Steel Cold Rolled 18ga	Panel, Side, Painted 7021	Emerson	543959P1	





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**Table 4. Summary of Tested Unit Subcomponents ~ cont'd**

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	<b>Sub-Component</b>	<b>Material</b>	<b>Description</b>	<b>Manufacturer</b>	<b>Part No.</b>
UUT-5 12V Top Terminal Battery Cabinet	Circuit Breaker	Molded Plastic	CB 3P 0400DF FM2C-----MTP540	Square D	MHF3640026DC1286
	Circuit Breaker	Molded Plastic	CB 3P 0600DF FM2C--UV--MTP810	Square D	MHF3660030DC1680
	Temp Sensor	Copper/plastic/metal	Battery cabinetTemperature sensor	Thermo O-Disc	NTN103J.2
	Temp Sensor	Copper/plastic/metal	Alber Temperature sensor	RDF Corp	29354
	Terminal Strip	Plastic	Term Strip, 12-position	Connectron	K-12
	Battery	Lead-Acid	UPS12-300MR	C&D	UPS12-300MR
	Battery	Lead-Acid	UPS12-540MR	C&D	UPS12-540MR
	Battery	Lead-Acid	HX300-FR	Energys Inc	HX300-FR
	Battery	Lead-Acid	HX540-FR	Energys Inc	HX540-FR
	Battery	Lead-Acid	24HR3000	East Penn	24HR3000
	Battery	Lead-Acid	31HR5000	East Penn	31HR5000
	Transformer	Carbon Steel/Copper	360 VA @ 230V	Emerson	540766G1
	Current Transducer	Copper/Plastic	0-600A DC	Ohio Semitronics Inc	CTG-601FSY60
	Wiring Harness - Alber	Copper cable	Wiring Harness	Emerson	532172G1
	Alber Data Collection	Laminate PWB + Metal Plate	Alber Data Collector unit	Alber	1003-801A0CRE
Alber Controller Module	Laminate PWB + Metal Plate	Alber Controller Module	Alber	1002-800C62E	
Housing / Side Panels	Carbon Steel Cold Rolled 18ga	Panel, Side, Painted 7021	Emerson	526056P1	

	<b>Sub-Component</b>	<b>Material</b>	<b>Description</b>	<b>Manufacturer</b>	<b>Part No.</b>
UUT-6 16V Front Terminal Battery Cabinet	Circuit Breaker	Molded Plastic	CB 3P 0700DF FM2C--UV--MTP945	Square D	MHF3670032DC1680
	Circuit Breaker	Molded Plastic	CB 3P 0900D5 FM2C--UV----1350	Square D	542592P6
	Temp Sensor	Copper/plastic/metal	Battery cabinetTemperature sensor	Thermo O-Disc	NTN103J.2
	Terminal Strip	Plastic	Term Strip, 12-position	Connectron	K-12
	Battery	Lead-Acid	Battery, 16HX800F	Energys Inc	16HX800F
	Battery	Lead-Acid	Battery, 16HX925F	Energys Inc	16HX925F
	Transformer	Carbon Steel/Copper	360 VA @ 230V	Emerson	540766G1
	Current Transducer	Copper/Plastic	0-600A DC	Ohio Semitronics Inc	CTG-601FSY60
	Wiring Harness - Alber	Copper cable	Wiring Harness	Emerson	532172G1
	Alber Data Collection	Laminate PWB + Metal Plate	Alber Data Collector unit	Alber	1003-801A0CRE
	Alber Controller Module	Laminate PWB + Metal Plate	Alber Controller Module	Alber	1002-800C62E
	Housing / Side Panels	Carbon Steel Cold Rolled 18ga	Panel, Side, Painted 7021	Emerson	526056P1

	<b>Sub-Component</b>	<b>Material</b>	<b>Description</b>	<b>Manufacturer</b>	<b>Part No.</b>
UUT-7 250kVA Maintenance Bypass Cabinet	Circuit Breaker	Molded Plastic	CB 3P 0400BE FM2A1BST--	Siemens	LJX3B400MA5RNX6
	Solenoid Key Release	Copper/Carbon Steel	Solenoid Key Rel w/2 1-in lkg	Kirk Key Interlock	531347P1
	Housing / Side Panels	Carbon Steel Cold Rolled 18ga	Panel, Side, Painted 7021	Emerson	526056P1

	<b>Sub-Component</b>	<b>Material</b>	<b>Description</b>	<b>Manufacturer</b>	<b>Part No.</b>
UUT-8 500kVA Maintenance Bypass Cabinet	Circuit Breaker	Molded Plastic	CB 3P 0800BE FM2A2BST--	Siemens	LMX3B800MA4RNX6
	Solenoid Key Release	Copper/metal	Solenoid Key Rel w/2 1-in lkg	Kirk Key Interlock	531347P1
	Housing / Side Panels	Carbon Steel Cold Rolled 18ga	Panel, Side, Painted 7021	Emerson	526057P1

	<b>Sub-Component</b>	<b>Material</b>	<b>Description</b>	<b>Manufacturer</b>	<b>Part No.</b>
UUT-9 12V Narrow Junction Cabinet	Housing / Side Panels	Carbon Steel Cold Rolled 18ga	Panel, Side, Painted 7021	Emerson	526056P1

	<b>Sub-Component</b>	<b>Material</b>	<b>Description</b>	<b>Manufacturer</b>	<b>Part No.</b>
UUT-10 16V Narrow Junction Cabinet	Housing / Side Panels	Carbon Steel Cold Rolled 18ga	Panel, Side, Painted 7021	Emerson	526056P1

	<b>Sub-Component</b>	<b>Material</b>	<b>Description</b>	<b>Manufacturer</b>	<b>Part No.</b>
UUT-2 Wide Junction Cabinet	Housing / Side Panels	Carbon Steel Cold Rolled 18ga	Panel, Side, Painted 7021	Emerson	526056P1

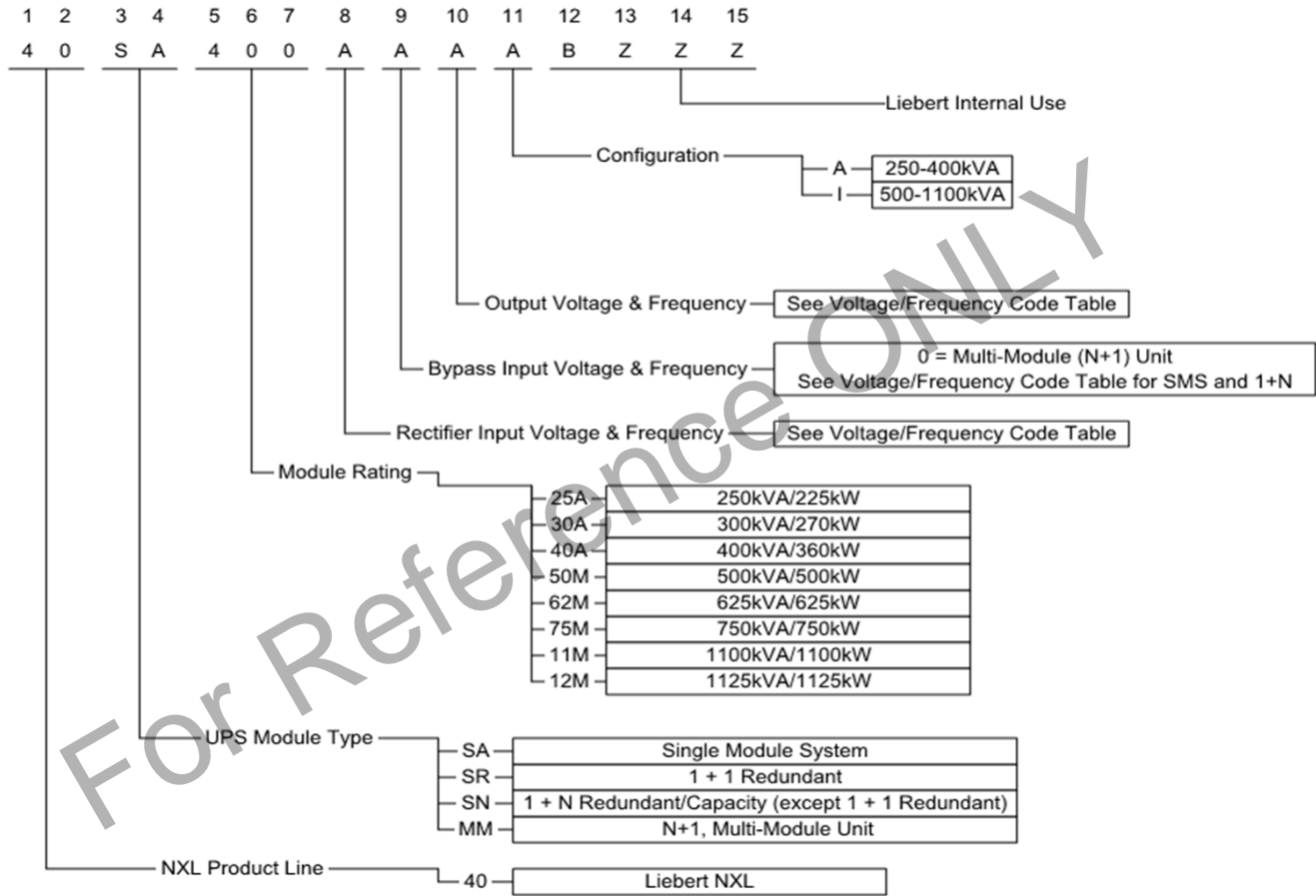


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**Table 5. Nomenclature**  
 Liebert NXL UPS

**Liebert NXL – UPS Module Top-Level Model Number**



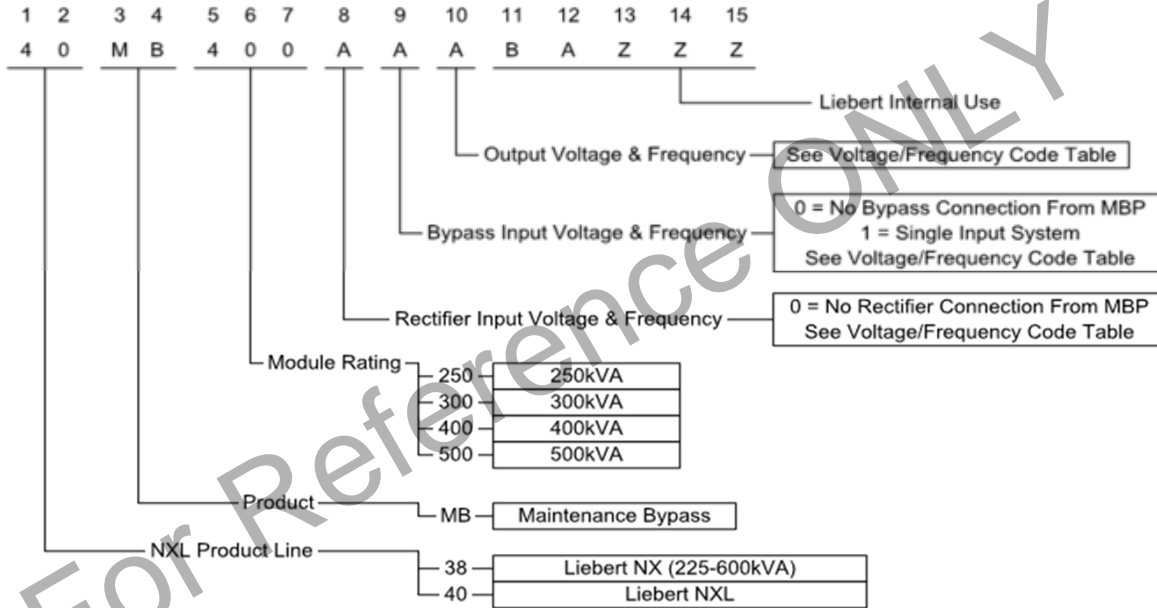


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**Table 5. Nomenclature ~ con't**  
 Liebert NXL Bypass Cabinet

**Liebert NXL – Maintenance Bypass Top-Level Model Number**



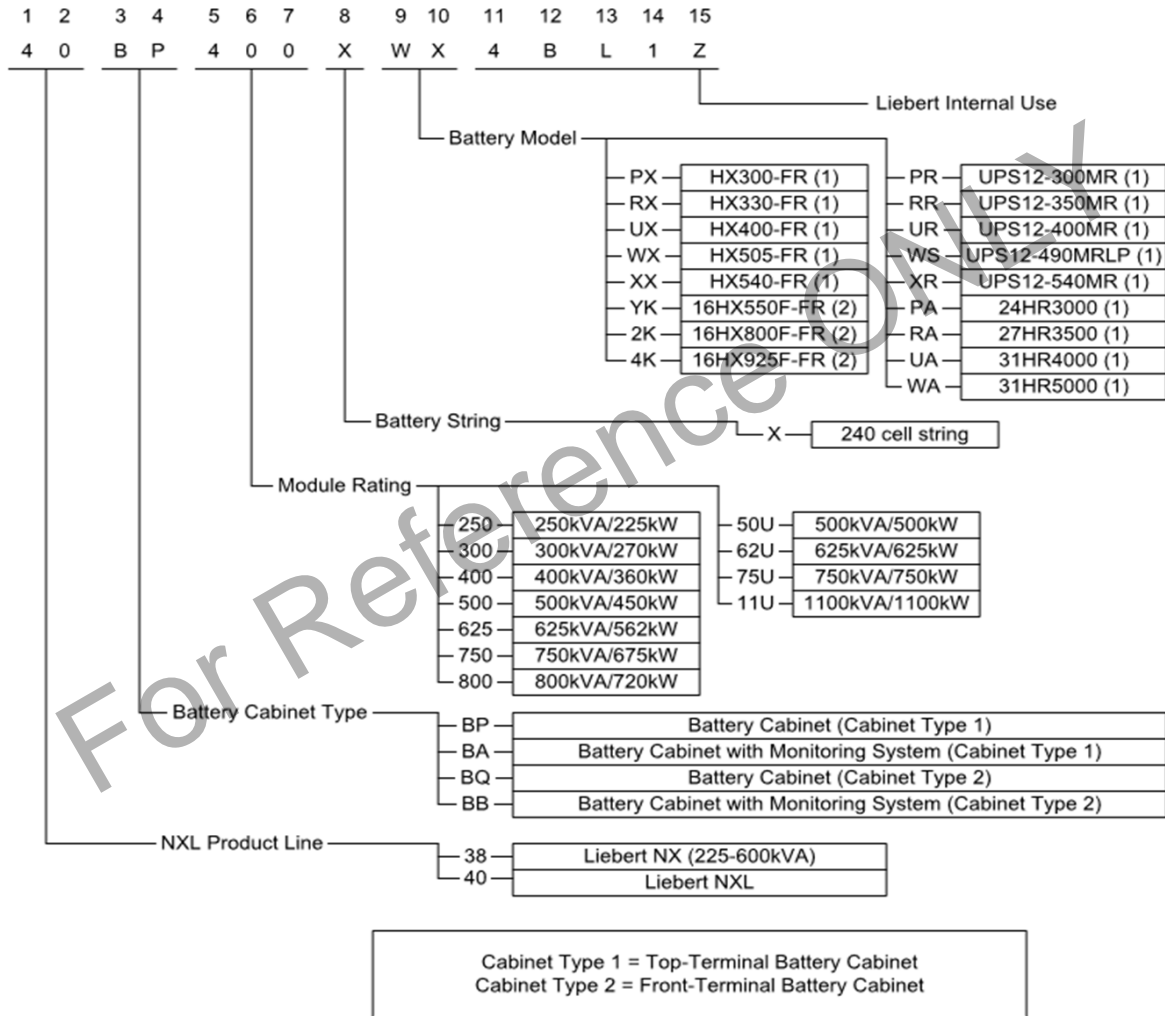


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**Table 5. Nomenclature ~ con't**  
 Liebert NXL Battery Cabinet

### Liebert NXL – Battery Cabinet Top-Level Model Number



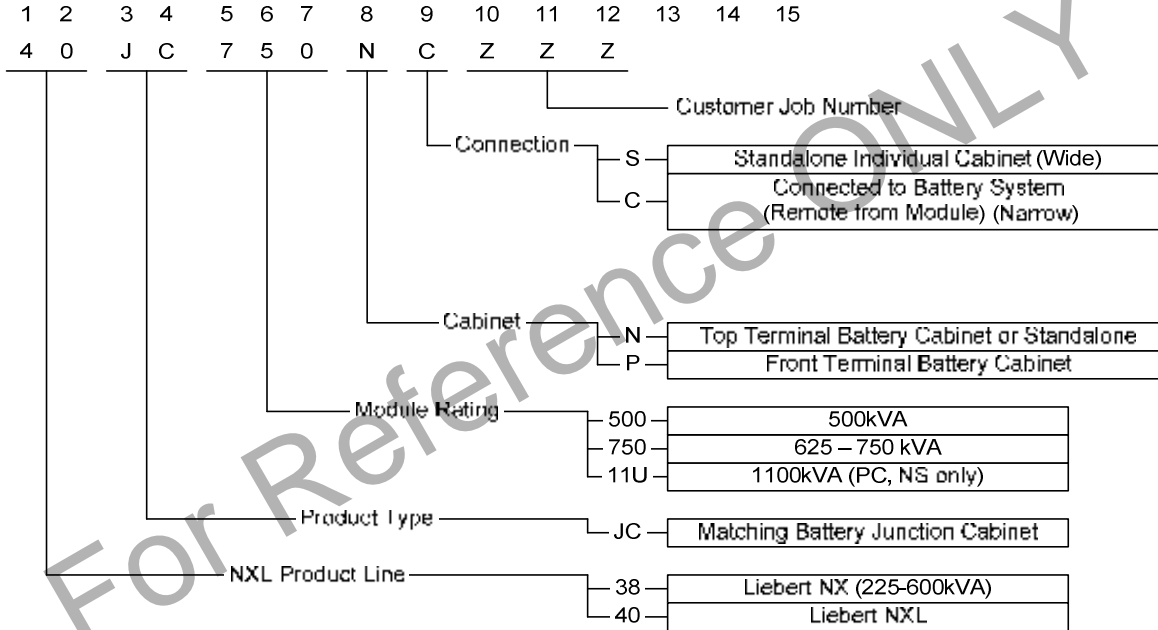


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**Table 5. Nomenclature ~ con't**  
 Liebert NXL Junction Cabinet

**Liebert NXL – Junction Cabinet Top-Level Model Number**



**Liebert Power Product Voltage/Frequency Codes**

Voltage	Phase	Frequency	Code
173	3	60	Z
182	3	60	S
200	3	60	P
208	3	60	C
220	3	60	Y
230	1	60	I
240	3	60	D
380	3	60	M
400	3	60	T
415	3	60	E
440	3	60	L
460	3	60	K
480	3	60	A
575	3	60	3
600	3	60	B

182	3	50	R
200	3	50	N
208	3	50	J
210	3	50	V
220	3	50	W
230	3	50	H
363	3	50	X
380	3	50	F
400	3	50	U
415	3	50	G
480	3	50	Q

Code	Voltage	Phase	Frequency
A	480	3	60
B	600	3	60
C	208	3	60
D	240	3	60
E	415	3	60
F	380	3	50
G	415	3	50
H	230	3	50
I	230	1	60
J	208	3	50
K	460	3	60
L	440	3	60
M	380	3	60
N	200	3	50
P	200	3	60
Q	480	3	50
R	182	3	50
S	182	3	60
T	400	3	60
U	400	3	50
V	210	3	50
W	220	3	50
X	363	3	50
Y	220	3	60
Z	173	3	60
3	575	3	60

**Test Setup Photos**  
**Liebert NXL**



Figure 1: UUT-1 250kVA UPS  
Attachment Method: hard-mount - (14)-3/4"dia bolts to table, angle brackets by Liebert

**Test Setup Photos ~ con't**  
**Liebert NXL**



Figure 2: UUT-3 750kVA UPS  
Attachment Method: hard-mount - (22)-3/4"dia bolts to fixture, angle brackets by Liebert

**Test Setup Photos ~ con't**  
**Liebert NXL**



Figure 3: UUT-4 1100kVA UPS  
Attachment Method: hard-mount - (30)-3/4"dia bolts to fixture, angle brackets by Liebert



**Test Setup Photos ~ con't**  
**Liebert NXL**



Figure 4: UUT-5 12V Top Terminal Battery Cabinet (UUT-9 Junction Cabinet on right side)  
Attachment Method: hard-mount - (20)-3/4"dia bolts to table, angle brackets by Liebert

**Test Setup Photos ~ con't**  
**Liebert NXL**



Figure 5: UUT-6 16V Front Terminal Battery Cabinet (UUT-10 Junction Cabinet on right side)  
Attachment Method: hard-mount - (32)-3/4" dia bolts to table, angle brackets by Liebert

**Test Setup Photos ~ con't**  
**Liebert NXL**



Figure 6: UUT-7 250kVA MBC (left) and UUT-8 500kVA MBC (right)  
Attachment Method: hard-mount - (4)-3/4" dia bolts each to table, angle brackets by Liebert

**Test Setup Photos ~ con't**  
**Liebert NXL**



Figure 7: UUT-2 Wide Junction Cabinet (tested without left and right side panels)  
Attachment Method: hard-mount - (4)-3/4"dia bolts to table, angle brackets by Liebert