

DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION FACILITIES DEVELOPMENT DIVISION

| APPLICATION FOR HCAI SPECIAL SEISMIC | OFFICE USE ONLY |
|--|--|
| CERTIFICATION PREAPPROVAL (OSP) | APPLICATION #: OSP-0640 |
| 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 | MD, |
| Product Name: UPS and Batteries | 1 miles |
| Product Type: UPS | 2 |
| Product Model Number: Varies (See attachment) | |
| General Description: UPS Cabinets BY: Mohammad Karin | n 🔍 O |
| Mounting Description: Rigid, Floor Mounted | |
| Tested Seismic Enhancements: Seismic enhancements made to the test anomalies during the tests shall be income | t units and/or modifications required to address reprint the production units. |
| Applicant Information | |
| | |
| Applicant Company Name: TRU Compliance, by Structural Integrity Associa | ates, Inc. |
| Contact Person: Daniel Zentner | |
| Mailing Address: 5215 Hellyer Ave., Suite 210, San Jose, CA 95138 | |
| Telephone: (541) 292-5839 Email: dzentner@struct | tint.com |
| Title: Program Manager | |

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

OPAA-0640

HCA



DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION FACILITIES DEVELOPMENT DIVISION

| California Licensed Structural Engineer Res | sponsible for the Engineering and Test Report(s) |
|--|--|
| Company Name: STRUCTURAL INTEGRITY ASS | OCIATES, INC. |
| Name: Andrew Coughlin | California License Number: S6082 |
| Mailing Address: 5215 Hellyer Ave, Suite 101, San | Jose, CA 951381025 |
| Telephone: (415) 635-8461 | Email: acoughlin@structint.com |
| | |
| Certification Method | |
| GR-63-Core X ICC-ES AC156 | ☐ IEEE 344 |
| Other (Please Specify): | |
| | ORCODECO |
| Testing Laboratory | Mp. |
| Company Name: ENVIRONMENTAL TESTING LA | BORATORIES, INC. (ETL) |
| Contact Person: Jeremy Lange | 2 |
| Mailing Address: 11034 Indian Trail, Dallas TX 752 | 229-3513 |
| Telephone: (972) 247-9657 | Email: jeremy@etIdallas.com |
| | |
| | TE: 08/26/2022 |
| | |
| | |
| PNT | |
| CRUKORNI | BUILDING |



STATE OF CALIFORNIA – HEALTH AND HUMAN SERVICES AGENCY



DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION FACILITIES DEVELOPMENT DIVISION

Seismic Parameters

| Desigr | Basis of Equipment or Components | (Fp/Wp) = | 1.12 (SDS = 1.55, z/h = | = 1); 1.01 (S | DS = 2.25, z/h = 0) |
|---------|---|----------------|-------------------------------|----------------|-------------------------------|
| ę | SDS (Design spectral response accele | eration at sho | ort period, g) = $1.55 (z/l)$ | h = 1), 2.25 (| (z/h = 0) |
| é | ap (Amplification factor) = | 1.0 | | | |
| I | Rp (Response modification factor) = | 2.5 | | | |
| 2 | Ω_0 (System overstrength factor) = | 2.0 | | | |
| I | p (Importance factor) = | 1.5 | | | |
| 2 | z/h (Height ratio factor) = | 1 and 0 | | | |
| 1 | Natural frequencies (Hz) = | See Attach | ment | | |
| (| Overall dimensions and weight = | See Attach | ment ODE COM | | |
| HCAI | Approval (For Office Use Only) | Approval E | Expires on 08/26/202 | 8 7 | |
| Date: | 8/26/2022 | | OSP-0640 | G | |
| Name: | Mohammad Karim | | | Title: | Supervisor, Health Facilities |
| Specia | I Seismic Certification Valid Up to: SE | os (g) = See | e Above | z/h = | See Above |
| Conditi | on of Approval (if applicable): | DATE | : 08/26/2022 | Jo | |
| | | PRNIA B | E DING CO | 20 | |

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



SPECIAL SEISMIC CERTIFICATION CERTIFIED COMPONENT MATRIX

1900510-CR-001-R4



| Manufacturer: | Vertiv Corporation | | | | | | TABI | F 1 |
|--|--------------------------------|--------------|---------------|---------------|---------|------------------------|--------------|-----------------------------|
| Model Line: | Liebert EXS UPS | | | | | | IADI | - 6- 4 |
| | nstruction Summary: | | | | | | | |
| Carbon Steel Frame ar | nd Skins | | | | | | | |
| | | | | | | | | |
| Contified Ontions Com | | | | | | | | |
| Certified Options Sur 10, 15, 20, and 30 kVA/ | = | | | | | | | |
| 208/220V | r v v | | | | | | | |
| Three-Phase Power | | | | | | | | |
| | ion (Ctondolono). | | COD | | | | | |
| Mounting Configurat | ion (Standalone): | EOF | LOL | PE CO | | | | |
| Base mounted - rigid | | 0 | | | 40.00 | | | |
| Note: Installed mounting co | nfiguration must be of similar | configuratio | on and equiva | lent strength | | | | |
| Building Code: CBC 2 | 022 | Seismic (| Certificatio | on Limits: | | 1.55 g z/ 2.25 g z/ | | / _P = <i>1.5</i> |
| | | Di | mensions | fin1.0 | Weight | 1.25 g 2/ | 11-0.0 | |
| Model Line | Model | Depth | Width | Height | (lb) | | Notes | UUT |
| 540 5 4 | 53S10AC1AXXXXX | R\25.6/ | ha13.2 | 51,2rin | 437 | 1 Battery S | itring | Extrap |
| EXS Frame 1 | | | | | | | | Extrap |
| 10 kVA | 53S10EC2A0B0052 | 25.6 | 13.2 | 51.2 | 627.5 | 2 Battery S | itrings | 1 |
| EXS Frame 1S with | 53S10AC3AXXXXX | 25.6 | 22.7 | 51.2 | 893 | 3 Battery S | - | Interp |
| Extended Battery | | | | ANNA A | REA C | | | Interp. |
| 10 kVA | 53S10FC4A0A0052 | 25.6 | 22.7 | 51.2 | 1,128.5 | 4 Battery S | strings | 2 |
| | 53S15GC2B0XXXX | 29.5 | 17.3 | 63.0 | 734 | | | Interp |
| | 53S15AG3AXXXXX | 29.5 | 17.3 | .63.0 | 888 | | o EXS 20kVa, | Interp |
| EXS Frame 2 | 53S15GC4AXXXXX | 29.5 | U17.3 | 63.0 | 1,042 | Software | | Interp. |
| 15-20 kVA | 53S20GC6A0000CB | 29.5 | 17.3 | 63.0 | 767.5 | 2 Battery S | strings | 3 |
| | 53S20GCXAXXXXXX | 29.5 | 17.3 | 63.0 | 888 | | | Interp. |
| | 53S20GC8A0C00CO | 29.5 | 17.3 | 63.0 | 1,124.5 | 4 Battery S | itrings | 4 |
| EXS Fame 3 | 53S30HCERXXXXXX | 23.6 | 33.5 | 63.0 | 1,162 | 1 Battery S | itring | Interp. |
| 30 kVA | 53S30HCFR000CST | 23.6 | 33.5 | 63.0 | 1,079.5 | 2 Battery S | - | 5 |
| | 53BP30H11L1 | 23.6 | 33.5 | 63.0 | 870 | 1 Battery S | itring | 7 |
| EBC Frame 3 | 53BP30H12L1 | 23.6 | 33.5 | 63.0 | 1,376 | 2 Battery S | | 6 |
| | | | | | | | | |
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SPECIAL SEISMIC CERTIFICATION CERTIFIED COMPONENT MATRIX

1900510-CR-001-R4



| Manufacturer: | Vertiv Corporation | | | | | | ТΔ | BLE | 2 |
|----------------------------|-----------------------------------|--------------|--------------|---------------|----------------|----------------|-----------------|------------------|--------------|
| Model Line: | Liebert EXS UPS | | | | | | | | . _ |
| | onstruction Summary: | | | | | | | | |
| Carbon Steel Frame a | and Skins | | | | | | | | |
| | | | | | | | | | |
| Certified Options Su | ımmary: | | | | | | | | |
| 30 kVA/kW | | | | | | | | | |
| 208/220V | | | | | | | | | |
| Three-Phase Power | | | | | | | | | |
| Mounting Configura | tion (Ganged ¹): | IOF | 2 COГ |)FC | | | | | |
| Base mounted - rigid | | FU | | 10 | 10 | | | | |
| Note: Installed mounting c | configuration must be of similar | configuratio | n and equiva | lent strength | and stiffnes | s to those tes | ted. | | |
| Building Code: CBC | 2022 | Seismic | Cartificati | on Limits: | | 1.55 g z | | /_= | 1.5 |
| Dununig Coue, CDC | | Seisinie | | Un Linnes. | S DS= | 2.25 g Z | <u>r/h=0.0</u> | • ٢ | 1.5 |
| Model Line | Modet | | mensions | | Weight | m) | Notes | | UUT |
| EXS Frame 3 | 53S30HCGRBXXXX | Depth | Width | Height | (lb) 1,162 | 1 Battery S | String | | Evtran |
| 30 kVA | 53S30HCGRBAAAA 53S30HCFR000CST | 47.2 | 67.0 | 63.0 | 1,162 | 2 Battery | - | | Extrap. 8 |
| 30 (0/) | 53BP30R11X1XXXX | 23.6 | 33.5 | 63.0 | 870 | 1 Battery | - | | e Extrap. |
| EBC Frame 3 | 53BP30H21L1 | 23.6 | 33.5 | 63.0 | 1,376 | | Strings, 1344.5 | lhc ² | 8 Extrap. |
| | | 23.0 | 33.5 | 03.0 | 1,310 | Z Dattery J | unigs, 1044.0 | 105 | 0 |
| | | | | <u>MANN</u> | \sim | | | | |
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| Notes: | | 4 | L | 4 | 4 | 4 | | | |

2. EBC Frame 3 was ganged battery cabinet weighs less than identical standalone due to right panel being removed to attached the unit to a UPS.

SPECIAL SEISMIC CERTIFICATION NOMENCLATURE MATRIX

1900510-CR-001-R4



| nufacturer: del Line: | | Corporation EXS UPS | | | | | | | TABL | E 3 |
|--------------------------|---------------------|--|--|---|--|---|---|---|---|--|
| 1-2 Product Line | 3 System Type | 4-5 Nameplate Rating | 6 Frame Type | 7 Input & Outpet Voltage | Battery String Qty & No. of Jars/String | 9 Battery Model Code | 10 Factory Installed Communication Cards ^{1, 2} | 11 Factory Installed Distribution | 12 Factory Installed Distribution Slot 2 ³ | 13-15 Config Dig |
| 53 = Liebert EXS | S = Single Module | 10 = 10kVA/10kW 15 = 15kVA/15kW 20 = 20kVA/20kW 30 = 30kVA/30kW | A = Frame 1 335mm, 10kA B = Frame 1S 570mm, 10kA E = Frame 1 335mm, 30kA F = Frame 1S 570mm, 30kA G = Frame 2 440mm, 30kA H = Frame 3 600mm, 30kA | C = 208/120 in 208/120 out Y= 220/127 in 220/127 out | 0 = None 1 = 1 String - 32 Jars 2 = 2 Strings - 32 Jars 4 = 4 Strings - 32 Jars 6 = 2 Strings - 28 Jars 8 = 4 Strings - 28 Jars 8 = 4 Strings - 28 Jars 6 = 3 Strings - 20 Jars 6 = 3 Strings - 20 Jars 6 = 3 Strings - 20 Jars ATE: 08/2 0/2 | 0 = No Battery A = CSB HRL1234WF2FR R = CSB HRL12150WFR 0640 ad Karim 6/2022 | 1 = JS-UNITY-SNMP / None 2 = JS-UNITY-SNMP / None 3 = JS-UNITY-UFE / IS-RELAY 4 = IS-UNITY-IFE / IS-RELAY 6 = IS-UNITY-SNMP / IS-RELAY 8 = IS-UNITY-OP / IS-RELAY 8 = IS-UNITY-OP / IS-UNITY-SNMP C = IS-UNITY-OP / IS-UNITY-SNMP C = IS-UNITY-SNMP / IS-UNITY-SNMP D = IS-485EXI / None E = IS-485EXI / IS-RELAY | These characters are s 0 = None A - (2) L21-30R [PD3-0 B - (6) L6-30R [PD3-00 C - (6) L5-30R [PD3-00 D - (1) IEC60309 3W [I E - (6) L5-20R [PD3-00 G - (2) L15-30R [PD3-00 H - (1) CS6855 [PD3-0 H - (1) CS6855 [PD3-0 L - (1) IEC60309 4W [I 1 = (2) L21-20R [PD3-00 K - (2) L15-20R [PD3-00 K - (2) L15-20R [PD3-00 H - (2) L21-20R (4) 5-11 3 = (4) L6-30R, (2) L6-2 [PD2-103] 6 = (4) L6-20R, (4) 5-11 8 = (2) L6-30R, (2) L6-2 [PD2-105] 6 = (4) L6-20R, (4) 5-11 8 = (2) L6-30R, (2) L5-2 [PD2-105] 6 = (4) L6-20R, (4) 5-11 8 = (2) L6-30R, (2) L5-2 [PD2-105] 6 = (4) L6-20R, (4) 5-11 8 = (2) L6-30R, (2) L5-2 [PD2-105] 6 = (4) L6-20R, (4) 5-11 8 = (2) L6-30R, (2) L5-2 [PD2-200] X = (2) IEC320-C19, (8) [PD2-201] Y = (12) IEC320-C13, [I Z = (2) IEC320-32A, (4) [PD2-204] | 12] 13] 14] 15] 16] 16] 16] 100 101 103 101 103 101 103 101 103 103 | Unique Number Automati Assigned |

2. Communication card codes A, B, and C are only available in Liebert EXS Frames 2 & 3 (15-30 kVA)

3. Distribution Slot #2 is only available on the Liebert EXS Frames 2 & 3 (15-30 kVA)

SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENT MATRIX

1900510-CR-001-R4



| Manufacturer: Model Line: | Vertiv Corporation Liebert EXS UPS | | | | Table De | scription: Subcomponents | | TABLE 4 |
|---|---------------------------------------|-------|---------|--------------|-----------------------|--|----------------------|-------------|
| Building Code: CBC 2 | 022 | | Seismic | Certificatio | on Limits: | S _{DS} = 1.55 g z/h = 1.0 S _{DS} = 2.25 g z/h = 0.0 | / _P = 1.5 | |
| Model Line | Model | Di | mension | (in) | Weight | DE Material | Not | tes UUT |
| (Manufacturer) | Model | Depth | Width | Height | (lb) | | | 001 |
| Battery | HRL123W-F2FR | 2.60 | 6.00 | 3.70 | 6.00 | Lead Acid | | 1, 2, 3, 4, |
| (CBS) | HRL12150W-FR | 7.70 | 5.12 | 6.80 | 26.50 | Lead Acid | | 6, 7, 8 |
| Battery (Data Safe) | 12HX150 | 7.68 | 5,12 | 6.46 | D ^{22.50} -(| Lead Acid | | 8 |
| Bypass /Maintenance Isolation Breaker (ABB) | S203-C40 | 2.10 | 2.70 | B3:50M | oh∈ | Plasticarim O | | 1, 2, 3 |
| Maintenance Bypass Breaker (ABB) | S203-C50 | 2.10 | 2.70 | DATE 3.50 | 08/2 | 6/2022 Plastic | | 1, 2, 3 |
| Rectifier Input Breaker (ABB) | S204-C40 | 2.80 | 2.70 | 3.50 | 1.10 | Plastic | | 1, 2, 3 |
| Breaker | NDM1-125C80/3 | 2.80 | 2.70 | 3.50 | 1.20 | Plastic | | 4, 5 |
| (NADER) | NDM1-125C125/3 | 2.80 | 2.70 | 3.50 | 1.20 | Plastic | | 8 |
| Breaker (Siemens) | 3VA5217-5EC31-0AA0 | 4.20 | 4.10 | 7.30 | 4.50 | Plastic | | 6, 7, 8 |
| | IS-UNITY-LIFE | | 3.00 | 1.50 | 0.44 | | | 1, 2 |
| Communication Courts | IS-UNITY-SNMP | | 3.00 | 1.50 | 0.44 | | | 3 |
| Communication Cards (Liebert) | IS-UNITY-DP | | 3.00 | 1.50 | 0.44 | Carbon Steel and Plastic | | 4 |
| | IS-RELAY | | 3.00 | 1.50 | 0.44 | | | 5,6 |
| | IS-485EXI | | 3.00 | 1.50 | 0.44 | | | 5,6 |
| | | | | | | | | |

TRU Compliance, by Structural Integrity Associates, Inc. 844-TRU-0200 | info@trucompliance.com

SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENT MATRIX

1900510-CR-001-R4



| Vertiv Corporation Liebert EXS UPS | | | | Table Des | scription: Power Output Distri | oution (PODS) | TABL | E 5 |
|---------------------------------------|---|---|--|---|---|---|---|--|
| 022 | | Seismic C | ertificatio | on Limits: | $S_{DS} = 1.55 g z/h = 1.0$ $S_{DS} = 2.25 g z/h = 0.0$ | / _P = 1.5 | | |
| Model ¹ | Di | mension (| in) | Weight | 75 | Not | tes | UUT |
| Model | Depth | Width | Height | (lb) | | | | |
| PD3-001 | | 7.4 | 5.7 | 4.4 | | (2) L21-30R | | 2 |
| PD3-002 | | 7.4 | 5.7 | 6.6 | | (6) L6-30R | | 1 |
| PD3-003 | | 7.4 | 5.7 | 6.6 | 10Z | (6) L5-30R | | 4 |
| PD3-004 | | 7.4 | 5.7 | DS4.4-(| 640 <u> </u> | (1) IEC60309 - 60A (4) | W+G) | Interp |
| PD3-005 | | 7.4 | 5.7 | 6.6 | | (6) L5-20R | | Interp |
| PD3-006 | | 7.4 | B 5.7 M | ohainm | Carbon Steel and Plastic | (6) L6-20R | | Interp |
| PD3-007 | | 7.4 | 5.7 | 4.4 | | (2) L15-30R | | Interp |
| PD3-008 | | 7.4 | 5.7 | 4.4 | 6/2022 | (1) CS8364C- 60A | | Interp |
| PD3-009 | | 7.4 | 5.7 | • 4.4 | 0/2022 5 | (2) L21-20R | | Interp |
| PD3-010 | | 7,4 | 5.7 | 4.4 | | (2) L15-20R | | Interp |
| PD3-011 | | 7.4 | 5.7 | 4.4 | | (1) IEC60309 - 60A (3) | W+G) | Interp |
| | | | AVA E | UILD | INGCODY | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | 022 Model ¹ PD3-001 PD3-002 PD3-003 PD3-004 PD3-005 PD3-006 PD3-007 PD3-008 PD3-009 PD3-010 | 022 Model ¹ Depth PD3-001 PD3-002 PD3-003 PD3-003 PD3-004 PD3-005 PD3-006 PD3-006 PD3-007 PD3-008 PD3-009 PD3-010 | Model ¹ Dimension (PD3-001 7.4 PD3-002 7.4 PD3-003 7.4 PD3-004 7.4 PD3-005 7.4 PD3-006 7.4 PD3-007 7.4 PD3-008 7.4 PD3-009 7.4 | Model ¹ Dimension (in) PD3-001 7.4 5.7 PD3-002 7.4 5.7 PD3-003 7.4 5.7 PD3-004 7.4 5.7 PD3-005 7.4 5.7 PD3-006 7.4 5.7 PD3-007 7.4 5.7 PD3-008 7.4 5.7 PD3-009 7.4 5.7 PD3-010 7.4 5.7 | Model ¹ Dimension (in) Weight (lb) PD3-001 7.4 5.7 4.4 PD3-002 7.4 5.7 6.6 PD3-003 7.4 5.7 6.6 PD3-004 7.4 5.7 6.6 PD3-005 7.4 5.7 6.6 PD3-006 7.4 5.7 6.6 PD3-005 7.4 5.7 6.6 PD3-006 7.4 5.7 6.6 PD3-007 7.4 5.7 4.4 PD3-008 7.4 5.7 4.4 PD3-009 7.4 5.7 4.4 PD3-010 7.4 5.7 4.4 PD3-010 7.4 5.7 4.4 PD3-010 7.4 5.7 4.4 PD3-010 7.4 5.7 4.4 PD3-011 7.4 5.7 4.4 | Seismic Certification Limits: $S_{DS} = 1.55 g z/h = 1.0$ $S_{DS} = 2.25 g z/h = 0.0$ Model ¹ Dimension (in) Depth Weight (lb) Material PD3-001 7.4 5.7 4.4 PD3-002 7.4 5.7 6.6 PD3-003 7.4 5.7 6.6 PD3-004 7.4 5.7 6.6 PD3-005 7.4 5.7 6.6 PD3-006 7.4 5.7 6.6 PD3-007 7.4 5.7 4.4 PD3-008 7.4 5.7 4.4 PD3-009 7.4 5.7 4.4 PD3-001 7.4 5.7 4.4 PD3-006 7.4 5.7 4.4 PD3-008 7.4 5.7 4.4 PD3-009 7.4 5.7 4.4 PD3-010 7.4 5.7 4.4 PD3-011 7.4 5.7 4.4 | O22 Seismic Certification Limits: $S_{DS} = 1.55 g z/h = 1.0 \\ S_{DS} = 2.25 g z/h = 0.0$ $I_P = 1.5$ Model ¹ Dimension (in) Weight (lb) Material Not PD3-001 7.4 5.7 4.4 (2) L21-30R (6) L6-30R (6) L5-30R (2) L11-30R (2) L11-30R (2) L12-30R (2) L12-20R (1) IEC60309 - 60A (3) (2) L12-20R (3) L12-20R (3) L12-20R (3) L12- | Liebert Exs OPS Seismic Certification Limits: $S_{DS} = 1.55 g z/h = 1.0 \\ S_{DS} = 2.25 g z/h = 0.0$ $I_p = 1.5$ Model ¹ Dimension (in) Weight (lb) Material Notes PD3-001 7.4 5.7 4.4 (2) L21-30R (6) L6-30R (6) L6-30R (6) L6-30R (6) L5-30R (1) IEC60309 - 60A (4W+G) (6) L6-30R (2) L21-30R (3) L5-30R (3) L5-30R (3) L5-30R (3) L5-30R (3) L5-20R (4) L5-30R (1) IEC60309 - 60A (4W+G) (2) L15-30R (2) L15-20R (2) L12-20R (2) L12-20R (2) L12-20R (2) L12-20R (2) L15-20R (2) L15-20R (2) L15-20R (2) L15-20R (2) L15-20R (1) IEC60309 - 60A (3W+G) (2) |

1900510-CR-001-R4



| υυτ | Unit Description | Report Number | Testing Lab | Year Tested | ISO 17025 Accredited? | S _{DS} | z/h | I _P |
|--------|---|----------------|------------------------------------|----------------|--------------------------|-----------------|------------|----------------|
| 1 | EXS Frame 1 (10kVA) | 15392, Rev.3 | Environmental Testing Lab (ETL) | 2019 | Yes | 1.55 2.25 | 1.0 0.0 | 1.5 |
| 2 | EXS Frame 1S (10kVA w/ Battery) | 15392, Rev.3 | Environmental Testing Lab (ETL) | 2019 | Yes | 1.55 2.25 | 1.0 0.0 | 1.5 |
| 3 | EXS Frame 2 (20kVA) | 15392, Rev.3 | Environmental Testing Lab (ETL) | 2019 | Yes | 1.55 2.25 | 1.0 0.0 | 1.5 |
| 4 | EXS Frame 2 (20kVA) | 15392, Rev.3 R | Environmental Testing Lab (ETL) | 2019 | Yes | 1.55 2.25 | 1.0 0.0 | 1.5 |
| 5 | EXS Frame 3 - 30 kVA (2 String) | 15392, Rev.3 | Environmental Testing Lab (ETL) | 2019 | Yes | 1.55 2.25 | 1.0 0.0 | 1.5 |
| 6 | EBC Frame 3 (2 String) | 15392, Rev.3 | Environmental Testing Lab (ETL) | 2019 | Yes | 1.55 2.25 | 1.0 0.0 | 1.5 |
| 7 | EBC Frame 3 (1 String) | 15392, Rev.3 | Environmental Testing Lab (ETL) | 2019 | Yes | 1.55 2.25 | 1.0 0.0 | 1.5 |
| 8 | EBC Frame 3 - EXS Frame 3 (Ganged- 4 String) | 15392, Rev.3 | Environmental Testing Lab (ETL) | 2019 | Yes | 1.55 2.25 | 1.0 0.0 | 1.5 |
| | | E DATE. | 1 | | | | | |
| | | OP 1 | | Str' | | | | |
| | | WIA BU | ILDING C | | | | | |
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| lotes: | | | | | | | | |
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1900510-CR-001-R4



| Model Line: | Vertiv Co | rporation | | | | | | | | | 1 |
|--|-----------------------|------------|------------|---------|------------------------------|-----------------|----------------|------------------------|------------------------|------------------------|--------------------|
| mouel Eme. | Liebert E | XS UPS | | | | | | | | JUT | |
| Model Number: | 53S10EC | 2A0B0052 | | | | Serial N | umber: | M19GBE | 0002 | | |
| Product Construc Carbon Steel Fram | - | - | ngs | | | | | | | | |
| Options/Subcom | .123W-F2FR), B | Bypass/Mai | | | | | | | | | |
| Maintenance Byp Communication (| | | | _ | | | |)2) | | | |
| | | J. | | UUT PI | roperties | | | | | | |
| Weight | | Dime | nsion (in) | | | | Lowes | st Natural | Frequen | cy (Hz) | |
| (lb) | Depth | 2 M | /idth | OSHe | eight 40 | Front | -Back | Side | -Side | Ver | tical |
| 627.5 | 25.6 | | 13.2 | 5 | 51.2 | 13. | .84 | 10 | .59 | 22 | .50 |
| | | | | | eismic Rui | | | | | | |
| Building | g Code | | Test Crite | ria | S _{DS} (g) | z/h | I _P | A _{FLX-H} (g) | А _{RIG-Н} (g) | A _{FLX-V} (g) | A _{RIG-V} |
| CBC 2 | 2022 | | ICC-ESAC | 156 08/ | 26 <mark>1.55</mark> 2.25 | $2^{1.0}_{0.0}$ | 1.5 | 2.48 | 1.86 | 1.50 | 0.60 |
| Test Mounting De | lans: | | | | | | | | | | |

5 bolts. All bolts used lock washers and flat washers. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test. Contents were included in testing per operating conditions.

1900510-CR-001-R4



| Manufacturer: | Vertiv Co | rporation | | | | | | | | n |
|-------------------|------------------|---|--|--------------------------|-----------------------|----------------|------------------------|------------------------|------------------------|----------------------|
| Model Line: | Liebert EX | XS UPS | | | | | | | JUT | 2 |
| Model Number: | 53S10FC4 | 4A0A0052 | | | Serial N | umber: | M19GBE | 0003 | | |
| Product Constru | - | | | | | | | | | |
| Carbon Steel Frar | ne and Skin, 4 B | Battery Strings | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| Options/Subcon | | | | n Drookory / | | C(40) | | | | |
| - | | Sypass/Maintenanc ABB (S203-C50), Rec | | | | | | | | |
| | | (IS-UNITY-LIFE), Pov | _ | | | | 01) | | | |
| | | F | OKC | ODE C | 20 | | | | | |
| | | ED | | | Ms, | | | | | |
| | | 15 | υυτ | Properties | | 4 | | | | |
| Weight | | Dimension (in |) ¹ ,/////// | | | Lowe | st Natural | Frequen | cy (Hz) | |
| (lb) | Depth | Width | OSF | leight 40 | Front | t-Back | Side | -Side | Ver | tical |
| 1,128.5 | 25.6 | 22.7 | | 51.2 | | .62 | 11 | .02 | 28 | .40 |
| | | | | Seismic Ru | | | | | | |
| Buildir | ng Code | Test Crit | eria | S _{DS} (g) | z/h | I _P | A _{FLX-H} (g) | A _{RIG-H} (g) | A _{FLX-V} (g) | A _{RIG-V} (|
| CBC | 2022 | ICC-ES AG | C156 O8 | 3/2 <u>6/202</u> 2.25 | $2^{1.0}_{0.0}$ | 1.5 | 2.48 | 1.86 | 1.50 | 0.60 |
| To at Maxima D | | | 0000000000 | 2.23 | 0.0 | 6 | | | | |
| Test Mounting D | elans: | | 1 | | ARRY. | N/ | | | | |
| | | | | | | ~ | | | | |
| | | 64 | | MANA IL | 105 | | 1 | | | |
| | | 1 II | BUI | DING | | | | | | |
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| | | | | | 2.10 | | | | | |
| | | | | | | | | Cub | | |
| | - | o the shake table wi 60130P2, QTY 1 eacl | | - | | | | | | - |

functional per manufacturer requirement after shake table test. Contents were included in testing per operating conditions.

1900510-CR-001-R4



| Manufacturer: | Vertiv Cor | rporation | | | | | | | | | ົ |
|-------------------|-------------------------|------------|-------------|------------|---------------------|----------------|----------------|------------------------|------------------------|------------------------|----------------------|
| Model Line: | Liebert EX | XS UPS | | | | | | | Ľ | JUT | 5 |
| Model Number: | 53S20GC6 | 6A0000CE | 3 | | | Serial N | umber: | M19GB0 | 0002 | | |
| Product Construc | <i>tion Summar</i> y: | y: | | | | | | | | | |
| Carbon Steel Fram | ie and Skin, 2 B | Battery St | rings | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| Options/Subcom | ponent Summ | ary: | | | | | | | | | |
| Battery: CBS (HRL | | | | | | • | | | | | |
| Aaintenance Byp | | | | fier Input | Breaker: / | ABB (S204 | 1-C40), | | | | |
| Communication (| :ards: Liebert (| (IS-UNITY | -SNMP) | RCC | DFC | | | | | | |
| | | | OFL | | WWW | 011. | | | | | |
| | | | 1EP | | | | | | | | |
| | | <u> </u> | | UUT Pr | operties | | T | | | | |
| Weight | | | ension (in) | | | | | st Natural | | | |
| (lb) | Depth | 8 | Width | OSHe | right 40 | | -Back | | -Side | Ver | tical |
| 767.5 | 29.5 | | 17.3 | | 3.0 | | .52 | 5. | 92 | >33 | .33 |
| | | 0 | UT Highest | | eismic Rui | n Informa | ation | | . <u> </u> | | |
| Buildin | g 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} (|
| CBC 2 | 2022 | | ICC-ES AC1 | 56 08/ | 267202 | 2 1.0 | 1.5 | 2.48 | 1.86 | 1.50 | 0.60 |
| | | Y | | | 2.25 | 0.0 | 1 | | | | |
| Test Mounting De | lans. | | | | | E.S. | N | | | | |
| | | | VIA | BUTI | DING | G | | | | | |
| | | | A | OIL | | | | | | | |
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| | | | | | | 1.4 | | | | | |
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| | | | | | 1 | - | | | | | |
| JUT3 was base me | | | | | | 1 | | | | | |

5 bolts. All bolts used lock washers and flat washers. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test. Contents were included in testing per operating conditions.

1900510-CR-001-R4



| | Vertiv Co | rporatio | on | | | | | | • | | л |
|---|----------------------|----------|------------------------|---------|-----------------------|-------------------------|----------------------------|------------------------|------------------------|------------------------|----------------------|
| Model Line: | Liebert E | XS UPS | | | | | | | Ľ | JUT | 4 |
| Model Number: | 53S20GC | 8A0C00 | СО | | | Serial N | umber: | M19GB0 | 0003 | | |
| Product Construc Carbon Steel Fram | · | - | Strings | | | | | | | | |
| <i>Options/Subcomp</i> Battery: CBS (HRL Power Output Dis | 123W-F2FR), E | Breaker | | M1-125 | iC80/3), Commu | nication | Cards: | _iebert (IS- | -UNITY-DI | P), | |
| Power Output Dis | tribution: vei | | 5-003) | OR | CODE C | Mp, | | | | | |
| | | | S | U | UT Properties | | | | | | |
| Weight | | Di | mension (in | | | Lowes | est Natural Frequency (Hz) | | | | |
| (lb) | Depth Width | | | 03 | S Height 40 | Front-Back | | Side | Side-Side | | tical |
| 1,124.5 | 29.5 | | 17.3 | | 63.0 | 9. | 06 | 3.79 | | 19.97 | |
| | | | UUT Highe | st Pas. | sed Seismic Rul | n Informa | ation | | | | |
| Building Code | | | Test Crit | teria | S _{DS} (g) | z/h | I _P | A _{FLX-H} (g) | A _{RIG-H} (g) | A _{FLX-V} (g) | A _{RIG-V} (|
| CBC 2022 | | Ç | IC <mark>C-ES A</mark> | C156 | 08/26/202 | 2 ^{1.0} 0.0 | 1.5 | 2.48 | 1.86 | 1.50 | 0.60 |
| Test Mounting De | tails: | | PRA | | | CODE | 12 is | | | | |

UUT4 was base mounted - rigid to the shake table with mounting brackets at the front and rear base of the unit. Each mounting bracket (Vertiv-PN: 610224P1) was attached to the unit with four (4) 3/8" Grade 5 bolts and to the shake table with (3) 3/8" Grade 5 bolts. All bolts used lock washers and flat washers. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test. Contents were included in testing per operating conditions.

1900510-CR-001-R4



| Manufacturer: | Vertiv Co | rporati | on | | | | | | | | 5 |
|--|-----------|-------------|---------------------------|-----------|---------------------|----------------|----------------|-----------------------|------------------------|------------------------|---------|
| Model Line: | Liebert E | XS UPS | | | | | | | Ľ | JUT | 5 |
| Model Number: | 53S30HC | FR000C | ST | | | Serial Nu | mber: | M19GBE | 008 | | |
| Product Construc Carbon Steel Fram | - | - | Strings | | | | | | | | |
| <i>Options/Subcomp</i> Battery: CBS (HRL | | - | : Nader (NDM1 | -125C80/3 |), Commu | nication | Cards: I | iebert (IS- | RELAY, IS | 5-485EXI) | |
| | | | NED FC | R CO | | MAS | * | | | | |
| | | | | UUT Pro | operties | | 7 | | | | |
| Weight | | | mension (in) | | | | Lowest Natura | | | <u> </u> | |
| (lb) | - | Depth Width | | 63.0 | | Front-Back | | Side-Side 5.51 | | | tical |
| 1,079.5 | 23.6 | | 33.5 UUT Highest | | | 12.0 | | 5. | .11. | | .24 |
| Building | Code | P | Test Criter | | S _{DS} (g) | z/h | I _P | Any u (g) | A _{RIG-H} (g) | A _{rty v} (g) | Anc v (|
| CBC 2 | | C | IC <mark>C-ES AC</mark> 1 | | 1.55 | 2 1.0 2 0.0 | 1.5 | 2.48 | 1.86 | 1.50 | 0.60 |
| Test Mounting De | La115; | .+ | ORNIA | BUILD | DING | CODE | | | | | |

UUT5 was base mounted - rigid to the shake table with mounting brackets at the front and rear base of the unit. Each mounting bracket (Vertiv-PN: 660124P1) was attached to the unit with four (4) 3/8" Grade 5 bolts and to the shake table with (3) 3/8" Grade 5 bolts. All bolts used lock washers and flat washers. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test. Contents were included in testing per operating conditions.

1900510-CR-001-R4



| Manufacturer: | Vertiv Co | orporation | | | | | | . | | C |
|----------------------|-----------------------|------------------|-------------|---------------------|----------|----------------|------------|------------------------|------------------------|---------|
| Model Line: | Liebert E | XS UPS | | | | | | Ľ | JUT | 0 |
| Model Number: | 53BP30H | 112L1 | | | Serial N | umber: | N/A | | | |
| Product Constru | ction Summar | r y: | | | | | | | | |
| Carbon Steel Frar | ne and Skin, 2 E | Battery Strings | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| Options/Subcon | - | - | | | | | | | | |
| Battery: CBS (HR | L12150W-FR), B | Breaker: Siemens | (3VA5217-5E | C31-0AA0), | Commun | ication | Cards: Lie | bert (IS-R | ELAY, IS- | 485EXI) |
| | | | | | | | | | | |
| | | | ORCO | DDEC | | | | | | |
| | | 0 | | WWWW | Ms | | | | | |
| | | NEL | | | | | | | | |
| Woight | | Dimension (i | | Properties | | Zaura | st Natural | Fraguas | ov (U=) | |
| Weight (lb) Depth | | Width | . 000 | OS Height 40 | | Front-Back | | -Side | T | tical |
| 1,376 | 23.6 | 33.5 | | 63.0 | 11.21 | | 6.44 | | | .20 |
| 1,510 | 23.0 | | est Passed | | | | 0. | | ~~~~~ | .20 |
| Buildir | g Code | Test Cr | | S _{DS} (g) | z/h | Ι _Ρ | Any u (g) | A _{RIG-H} (g) | A _{ELV V} (g) | |
| | | | | 1.55 | 1.0 | | | | | |
| CBC | 2022 | ICC-ES | AC156 08 | 2.25 | 2 0.0 | 1.5 | 2.48 | 1.86 | 1.50 | 0.60 |
| Test Mounting D | etails: | | | | | | | | | |
| | | E4 (3 | | | 2 | | | | | |
| | | | DUIL | DING | | | | | | |
| | | 1- | | - At | | | | | | |
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| | | | | | | T Fall | | | | |
| | | | | | | - | | | | |

UUT6 was base mounted - rigid to the shake table with mounting brackets at the front and rear base of the unit. Each mounting bracket (Vertiv-PN: 609885P1) was attached to the unit with four (4) 3/8" Grade 5 bolts and to the shake table with (3) 3/8" Grade 5 bolts. All bolts used lock washers and flat washers. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test. Contents were included in testing per operating conditions.

1900510-CR-001-R4



| Model Line: | Vertiv Co | rporation | | | | | | | 7 |
|--|----------------------|----------------------|-------------------|-------------------------|----------------|--------------------------------|------------------------|------------------------|----------------------|
| | Liebert EX | XS UPS | | | | | | JUT | |
| Model Number: | 53BP30H | 11L1 | | Serial Nu | mber: | N/A | | | |
| Product Construc Carbon Steel Fram | = | | | | | | | | |
| Options/Subcom | | • | | | | | | | |
| sattery: CBS (HRL | 12150W-FR), B | reaker: Siemens (3VA | D CODE - | | | | | | |
| | | NEDFO | | MA | | | | | |
| Woight | | Dimension (in) | UUT Properties | | 10000 | + Natural | Frogues | ov (H-) | |
| Weight (lb) Depth | | Width | OS Height 40 | Front-Back | | t Natural Frequen Side-Side | | Vertical | |
| 870 | 23.6 | 33.5 | 63.0 | 15.61 | | 7.27 | | 22.33 | |
| 010 | 23.0 | | Passed Seismic Ru | | | | 21 | | |
| Building | g Code | Test Criter | | z/h | I _P | A _{FLX-H} (g) | A _{RIG-H} (g) | A _{FLX-V} (g) | A _{RIG-V} (|
| CBC 2 | - | | 1.55 | 2 ^{1.0} 0.0 | 1.5 | 2.48 | 1.86 | 1.50 | 0.60 |
| Fest Mounting De | | TOPNEA | BUILDING | | | | | | |

1900510-CR-001-R4



| Manufacturer: | Vertiv Co | rporatio | n | | | | | | . | | 0 | | |
|---|-----------------|--------------------------|----------------|------------|----------------------|--|---------------------------|------------------------|------------------------|------------------------|-----------------------|--|--|
| Model Line: | Liebert E | XS UPS | | | | | | | ļ | JUT | ð | | |
| Model Number: | 53BP30H | 121L1 & 5 | 53S30HCER000 | OCST | | Serial Number: M19GBE0007 & M19GBE0008 | | | | | | | |
| Product Constru | | - | | | | | | | | | | | |
| Carbon Steel Fra | me and Skin. Ur | nits gang | ged together a | nd 4 Ba | ttery Strings. | | | | | | | | |
| | | | | | | | | | | | | | |
| <u> </u> | | | | | | | | | | | | | |
| <i>Options/Subcom</i> Battery: CBS (HF | - | - | fo (124150) | Proako | Madar (ND | M1 125C | 175/2) 0 | Siomone (| 21/45217 | | ۸۵) | | |
| Ballery: CDS (HF | LIZI30W-FR) & | Dala Sa | ie (1288150), | Бгеаке | | MT-172C | 125/3) & | Siemens (. | 3VA3Z17- | SEC31-UA | AU) | | |
| | | | | 20 | | | | | | | | | |
| | | | FC | RC | ODE C | 2 | | | | | | | |
| | | | ED' | | | Ms | | | | | | | |
| | | | S. | υυτ | Properties | | | | | | | | |
| Weight ¹ | | Dir | mension (in) | n/Wer/IDie | ashri WaxXxXXX | | Lowe | st Natural | Frequency (Hz) | | | | |
| (lb) | Depth | 2Z | Width O | | Height 40 | Front-Back | | Side-Side | | Vertical | | | |
| 2,957 | 23.6 | | 67.0 | 63.0 | | 7.22 | | 4. | 4.13 | | 17.48 | | |
| | | | UUT Highest | Passed | Seismic Run | Inform | ation | | - | 1 | | | |
| 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 | | |
| СВС | 2022 | | ICC-ES AC1 | 56 08 | 3/ 26/202 | 2 1.0 | 1.5 | 2.48 | 1.86 | 1.50 | 0.60 | | |
| | | ·7 | | 10000 | 2.25 | 0.0 | 5 | | | | | | |
| Test Mounting D | etails: | | | | | ARD. | $\widetilde{\mathcal{N}}$ | | | | | | |
| | | | Call | | | | | | | | | | |
| | 1 | - | 105 | | | (0^{\vee}) | | | | | | | |
| | 1 0 | | | 3011 | DIN | | | | | | | | |
| | | 1 | | | - | | - | ed is the t | | | | | |
| | | | | | | and | EBC. In | dividual d | etails are | as follo | ws: | | |
| | 1 | | - | | | FXS | Frame | 3: 1,581 lb | nc. | | | | |
| | | | 8 | | | | | 3: 1,376 lk | | | | | |
| | | | | | 444 | | | | | | | | |
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| | 10.00 | | | | | | | | | | | | |
| | 1 | Company of the local day | | | | | | | | | | | |
| | | | | | 200 | | | | | | | | |
| | | | ~ | | 4 | | | | | | | | |

UUT8 ganged together with two (2) M10 bolts at the front and back junction of the cabinents. UUT8 was base mounted - rigid to the table with four (4) brackets provided by manufacturer (Vertiv-PN:660124P1 & 609885P1, QTY 2 each). Each mounting bracket was attached to the unit with four (4) 3/8" Grade 5 bolts and to the shake table with (3) 3/8" Grade 5 bolts. All bolts used lock washers and flat washers. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test. Contents were included in testing per operating conditions.