



OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT
FACILITIES DEVELOPMENT DIVISION

APPLICATION FOR OSHPD SPECIAL SEISMIC
CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY

APPLICATION #: OSP – 0471 – 10

OSHPD Special Seismic Certification Preapproval (OSP)

Type: ☒ New ☐ Renewal

Manufacturer Information

Manufacturer: Toshiba International Corporation

Manufacturer's Technical Representative: Mike Alexander

Mailing Address: 13131 West Little York Rd., Houston, Texas 77041

Telephone: 713-466-0277 Email: TIC-UPS-RST-CSR@toshiba.com

Product Information

Product Name: 4400 & 4401 Uninterruptible Power System

Product Type: UPS & battery cabinets

Product Model Number: See Attachment 1

(List all unique product identification numbers and/or part numbers)

General Description: Uninterruptible Power Supply, battery cabinets & support cabinets. Seismic enhancements made to the test units and modifications required to address the anomalies observed during the tests shall be incorporated into the production units

Mounting Description: Rigid wall/floor mounted

Applicant Information

Applicant Company Name: EASE LLC

Contact Person: Jonathan Roberson, S.E.

Mailing Address: 5877 Pine Ave. Suite 210, Chino Hills, CA 91709

Telephone: (406) 541-EASE (3273) Email: j.roberson@easeco.com

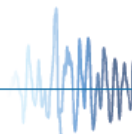
I hereby agree to reimburse the Office of Statewide Health Planning and Development review fees in accordance with the California Administrative Code, 2016.

Signature of Applicant:  Date: 12/10/2016

Title: Principal Engineer Company Name: EASE LLC

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

STATE OF CALIFORNIA – HEALTH AND HUMAN SERVICES AGENCY
OSH-FD-759 (REV 12/16/15)



OSHPD

"Equitable Healthcare Accessibility for California"
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**OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT
FACILITIES DEVELOPMENT DIVISION**

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

Company Name: EASE LLC
Name: Jonathan Roberson, S.E. California License Number: S4197
Mailing Address: 5877 Pine Ave. Suite 210, Chino Hills, CA 91709
Telephone: (909) 606-7622 Email: j.roberson@easeco.com

Supports and Attachments Preapproval

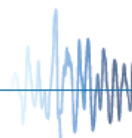
- ☐ Supports and attachments are preapproved under OPM-
(Separate application for OSHPD Preapproval of Manufacturer's Certification (OPM) of Supports and attachments is required)
☒ Supports and attachments are not preapproved

Certification Method

- ☒ Testing in accordance with: ☒ ICC-ES AC156
☐ Other (Please Specify): _____

Testing Laboratory

Company Name: Environmental Testing Laboratory, Inc.
Contact Name: Brady Richard
Mailing Address: 11034 Indian Trail, Dallas, TX 75229-3513
Telephone: (972) 247-9657 Email: brady@etldallas.com





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Seismic Parameters

Design in accordance with ASCE 7-10 Chapter 13: ☒ Yes ☐ No

Design Basis of Equipment or Components (F_p/W_p) = 1.44 ($S_{DS} = 2.0$ & $z/h = 1.0$); 1.13 ($S_{DS} = 2.5$ & $z/h = 0$)

S_{DS} (Design spectral response acceleration at short period, g) = 2.0 ($z/h = 1.0$); 2.5 ($z/h = 0$)

a_p (In-structure equipment or component amplification factor) = 1

R_p (Equipment or component response modification factor) = 2.5

Ω_0 (System overstrength factor) = 2

I_p (Importance factor) = 1.5

z/h (Height factor ratio) = 0 ($S_{DS} = 2.5$) & 1 ($S_{DS} = 2.0$)

Equipment or Component Natural Frequencies (Hz) = See Attachment 2

Overall dimensions and weight (or range thereof) = See Attachment 1, Table 1

Equipment or Components @ grade designed in accordance with ASCE 7-10 Chapter 15: ☐ Yes ☒ No

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

S_{DS} (Design spectral response acceleration at short period, g) = _____

S_{D1} (Design spectral response acceleration at 1 second period, g) = _____

R (Response modification coefficient) = _____

Ω_0 (System overstrength factor) = _____

C_d (Deflection amplification factor) = _____

I_p (Importance factor) = 1.5

Height to Center of Gravity above base = _____

Equipment or Component Natural Frequencies (Hz) = _____

Overall dimensions and weight (or range thereof) = _____

Tank(s) designed in accordance with ASME BPVC, 2015: ☐ Yes ☒ No

List of Attachments Supporting Special Seismic Certification

☒ Test Report(s) ☐ Drawings ☐ Calculations ☒ Manufacturer's Catalog

☒ Other(s) (Please Specify): See Attachment 1 & 2

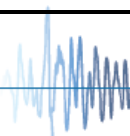
OSHPD Approval (For Office Use Only) – Approval Expires on December 31, 2022

Signature:  Date: December 19, 2016

Print Name: Ali Sumer Title: DSE

Special Seismic Certification Valid Up to : S_{DS} (g) = See Above z/h = See Above

Condition of Approval (if applicable): _____



ATTACHMENT 1: SEISMIC CERTIFIED COMPONENTS

ATTACHMENT PAGE | 1 OF 9

TABLE 1: SEISMIC CERTIFIED SYSTEMS & COMPONENTS

Manufacturer	Toshiba International Corporation						
Product Line	4400 / 4401 Uninterruptible Power System						
COMPONENT	TYPEFORM ^[3]	APPROX. DIMENSIONS (IN.)			MAX. WT. (LB.)	MOUNT	BASIS ^[1]
		W	D	H ^[2]			
4400 UPS – 10-80kVA (see Figure 1)							
4400 Product Line UPS Cabinet (80kVA) w/ one internal transformer	4400S3F800XAXNX-S	32.25	37.5	76	1640	Wall/Floor	UUT8
4400 Product Line UPS Cabinet (60/80kVA) w/ up to one internal transformer	4400n3n800nnXnn-S 4400n3n600nnXnn-S	32.25	37.5	76	1640	Wall/Floor	INT
4400 Product Line UPS Cabinet (40/50kVA) w/ up to two internal transformers	4400n3n500nnXnn-S 4400n3n400nnXnn-S	32.25	37.5	76	1620	Wall/Floor	INT
4400 Product Line UPS Cabinet (50kVA) w/ internal back-up batteries (Yuasa 150)	4400F3F500XABNX-S	32.25	37.5	76	1917	Wall/Floor	UUT9
4400 Product Line UPS Cabinet (40/50 kVA) w/ internal back-up batteries (Yuasa 150)	4400F3F500nnBnn-S 4400F3F400nnBnn-S	32.25	37.5	76	1917	Wall/Floor	INT
4400 Product Line UPS Cabinet (30kVA) w/ two internal transformer	4400S3K300XAXNX-S	20.25	37.5	67.8	981	Wall/Floor	UUT11
4400 Product Line UPS Cabinet (10/15/20/25/30kVA) w/ up to two internal transformers	4400n3n300nnXnn-S 4400n3n250nnXnn-S 4400n3n200nnXnn-S 4400n3n150nnXnn-S 4400n3n100nnXnn-S	32.25	37.5	67.8	981	Wall/Floor	INT
4400 Product Line UPS Cabinet (30kVA) w/ internal back-up batteries (Yuasa NPX-L35FR)	4400F3F300XABNX-S	20.25	37.5	67.8	806	Wall/Floor	UUT10
4400 Product Line UPS Cabinet (10/15/20/25/30kVA) w/ internal back-up batteries	4400F3F300nnBnn-S 4400F3F250nnBnn-S 4400F3F200nnBnn-S 4400F3F150nnBnn-S 4400F3F100nnBnn-S	32.25	37.5	67.8	725	Wall/Floor	INT
4400 Auxiliary Cabinets (40-80kVA) (see Figure 2)							
4400 Product Line Auxiliary Cabinet (80kVA) w/ MBS/PDP/Sub-Feed	440A800MFS3CPXXX-S	32.25	37.5	76	517	Wall/Floor	UUT12
4400 Product Line Auxiliary Cabinet (60/80 kVA) w/ or w/o MBS/PDP/Sub-Feed	440A800nFnnnnnnn-S 440A600nFnnnnnnn-S	32.25	37.5	76	517	Wall/Floor	INT
4400 Product Line Auxiliary Cabinet (40/50 kVA) w/ or w/o MBS/PDP/Sub-Feed	440A500nFnnnnnnn-S 440A400nFnnnnnnn-S	32.25	37.5	76	517	Wall/Floor	INT
4400 Auxiliary Cabinets (15-30kVA) (see Figure 3)							
4400 Product Line Auxiliary Cabinet (30kVA) w/ MBS/PDP	440A300MFPX-S	20.25	37.5	67.8	383	Wall/Floor	UUT13
4400 Product Line Auxiliary Cabinet (10/15/20/25/30kVA) w/ or w/o MBS/PDP	440A300nFnn-S 440A250nFnn-S 440A200nFnn-S 440A150nFnn-S 440A100nFnn-S	20.25	37.5	67.8	270	Wall/Floor	INT
4400 Battery Cabinets (15-80kVA) (see Figure 4)							
4400 Product Line Battery Cabinet (80kVA) w/ Enersys HX-400 Batteries	440B800010ER111X-S	32.25	37.5	76	2389	Wall/Floor	UUT14
4400 Product Line Battery Cabinet (80kVA) w/ Enersys HX-400 Batteries	440B800010ER111n-S	32.25	37.5	76	2389	Wall/Floor	INT

Table continued on next page

ATTACHMENT 1: SEISMIC CERTIFIED COMPONENTS

ATTACHMENT PAGE | 2 OF 9

Manufacturer	Toshiba International Corporation						
Product Line	4400 / 4401 Uninterruptible Power System						
COMPONENT	TYPEFORM ^[3]	APPROX. DIMENSIONS (IN.)			MAX. WT. (LB.)	MOUNT	BASIS ^[1]
		W	D	H ^[2]			
4400 Product Line Battery Cabinet (50kVA) w/ Energys HX-400 Batteries	440B500020ER111n-S	32.25	37.5	76	2389	Wall/Floor	INT
4400 Product Line Battery Cabinet (30kVA) w/ Energys HX-205 Batteries	440B300017ER111X-S	20.25	37.5	67.8	1224	Wall/Floor	UUT15
4400 Product Line Battery Cabinet (30kVA) w/ Energys HX-205 Batteries	440B300017ER111n-S	20.25	37.5	67.8	1224	Wall/Floor	INT
4400 Product Line Battery Cabinet (15/20/25kVA) w/ Energys HX-205 Batteries	440B250021ER111n-S 440B200028ER111n-S 440B150038ER111n-S	20.25	37.5	67.8	1460	Wall/Floor	INT
4401 UPS – 30-60kVA (see Figure 5)							
4401 Product Line UPS (50kVA) w/	4401F3F500FAXX-S	22.1	31.75	76	759	Wall/Floor	UUT1
4401 Product Line MBS Cabinet (50KVA)	44HM500SFFX-S	12	31.75	76	249		
4401 Product Line UPS Cabinet (40/50/60kVA) w/ or w/o MBS, Auxiliary or Battery Cabinets	4401F3F600nnnn-S 4401F3F500nnnn-S 4401F3F400nnnn-S	22.1	31.75	76	760	Wall/Floor	INT
4401 Product Line UPS Cabinet (30kVA) w/o MBS Cabinet	4401F3F300FAnn-S	22.1	31.75	76	704	Wall/Floor	UUT2
4401 Product Line UPS Cabinet (30kVA) w/ or w/o MBS, Auxiliary or Battery Cabinets	4401F3F300nnnn-S	22.1	31.75	76	755	Wall/Floor	INT
4401 Aux Cabinet – 30-60kVA (see Figure 6)							
4401 Product Line Auxiliary Cabinet (50kVA) w/ 2 isolation transformers	44HA500SXKX-S	22.1	31.75	76	1224	Wall/Floor	UUT3
4401 Product Line Auxiliary Cabinet (40/50/60kVA) w/ up to 2 isolation transformers	44HA600nnnn-S 44HA500nnnn-S 44HA400nnnn-S	22.1	31.75	76	985	Wall/Floor	INT
4401 Product Line Auxiliary Cabinet (30kVA) w/ up to 2 isolation transformers	44HA300nnnn-S	22.1	31.75	76	900	Wall/Floor	INT
4401 Product Line Auxiliary Cabinet (30kVA) w/ 1 isolation transformer	44HA300SXXX-S	22.1	31.75	76	503	Wall/Floor	UUT4
4401 Maintenance Bypass System (MBS) Cabinets – 30-60kVA (see Figure 7)							
4401 Product Line MBS Cabinet (50 kVA)	44HM500SFFX-S	12	31.75	76	249	Wall/Floor	UUT7
4401 Product Line MBS Cabinet (40/50/60 kVA)	44HM600nFFn-S 44HM500nFFn-S 44HM400nFFn-S	12	31.75	76	249	Wall/Floor	INT
Mount	Wall/Floor Mounted : rigid base mount with additional lateral restraint anchoring the unit to an adjacent wall or other supporting structure is provided along the height of the equipment.						
Notes	1. BASIS: <ul style="list-style-type: none"> UUT#: Indicates that a test specimen matching these characteristics was tested as part of this testing program. INT: indicates a model that was not tested and by which seismic qualification is established through evaluation of testing of other, similar models. 2. Dimension "H" (height) measured to top of upper mounting bracket. 3. The product "Typeform", found on the Toshiba International product label, defines the configuration of the unit. "n" indicates a variable value. Accepted variable character values and their meaning recognized by this document are presented in Figures 1 to 7 below.						

Figure 1: 4400 UPS Typeform Breakdown (OSHDP)

FOR REFERENCE ONLY

Digit#	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Sample 1 Typeform	<u>4</u>	<u>4</u>	<u>0</u>	<u>0</u>	<u>F</u>	<u>3</u>	<u>F</u>	<u>5</u>	<u>0</u>	<u>0</u>	<u>F</u>	<u>A</u>	<u>B</u>	<u>E</u>	<u>0</u>	<u>=</u>	<u>S</u>

4400 UPS Typeform Breakdown (OSHDP)		
Char	Key	Meaning and Description
1 – 2	Product line	44: 4400 Series
3 – 4	Product Version	00: UPS Voltage Topology 208/120 In and Out (3Phase/4 Wire+G)
5	Input Voltage options: (F 208/120V is standard Voltage Topology for UPS Input, Output, Alternate Bypass. G: 220/127V is achieved by software setting changes. Transformers are used for all other Voltage configurations)	<p><u>Voltage Configurations (includes Auto or Isolation Transformers for Voltages other than 208/120 UPS Topology)</u></p> <p><u>Primary Input (5) / Output (7) / Alternate Bypass (11)</u></p> <p>B: 208V Iso Xfmr (3-Phase/3-Wire +Gnd) F: 208/120V 4 wire + Gnd – (UPS Voltage platform, No Transformer) H: 380/220V Auto-Xfmr (3-Phase/4-Wire +Gnd) I: 400/230V Auto-Xfmr (3-Phase/4-Wire +Gnd) J: 415/240V Auto-Xfmr (3-Phase/4-Wire +Gnd) K: 480/277V Auto-Xfmr (3-Phase/4-Wire +Gnd) M: 380V Iso Xfmr (3-Phase/3-Wire +Gnd) N: 400V Iso Xfmr (3-Phase/3-Wire +Gnd) P: 415V Iso Xfmr (3-Phase/3-Wire +Gnd) S: 480V Iso Xfmr (3-Phase/3-Wire +Gnd) X: No separate Alternate bypass (11th digit only)</p> <p>NOTES: Auto-Transformers: The power feed to the UPS electronic side is always 208/120V so there is no phase shift from input to output of UPS System. Isolation Transformers: The power feed to the UPS Main or Alternate Bypass electronics is always 208/120V. A 30 degree phase shift occurs from input to output on such models. 10 -50kVA can have up to 2 transformers in cabinet (either UPS input and UPS output, UPS Main input and Alternate Bypass input, or Alternate Bypass input and UPS output). 80kVA one transformer either UPS input, UPS output, or Alternate Bypass input.</p>
6	Input/Output Phases	3: 3 Phase Input/3 Phase Output
7	Output Voltage options	See 5.
8 – 10	kVA Capacity	100: 10kVA Output Power 150: 15kVA Output Power 200: 20kVA Output Power 250: 25kVA Output Power 300: 30kVA Output Power 400: 40kVA Output Power 500: 50kVA Output Power 600: 60kVA Output Power 800: 80kVA Output Power
11	Alternate Bypass Voltage	See 5.
12	Output Frequency	5: 50 Hz (Set Hard) 6: 60 Hz (Set Hard) A: Auto-sense (standard)
13	Internal Batteries	B: Internal Batteries (15 to 50kVA only, no transformers) X: No Internal Batteries
14	Destination	E: Europe N: North America
15	Mfg. Specific**	n: Alpha characters Examples: O – OEM Vendor, T – OEM Vendor, P – OEM Vendor, S – OEM Vendor, A – OEM Vendor, V – OEM Vendor, C – OEM Vendor, W – OEM Vendor, X: Not used ** Mfg. Specific only affect color, branding and/or labels (i.e. cosmetic changes)
16-17	OSHDP Designator	=S: OSHDP Special Seismic Certified (always last characters of Typeform)

Figure 2: 4400 Aux Cabinet Typeform Breakdown – 10-30kVA

FOR REFERENCE ONLY

Digit#	1	2	3	4	5	6	7	8	9	10	11	12	13
Sample 1 Typeform	<u>4</u>	<u>4</u>	<u>0</u>	<u>A</u>	<u>3</u>	<u>0</u>	<u>0</u>	<u>M</u>	<u>F</u>	<u>P</u>	<u>0</u>	<u>=</u>	<u>S</u>

4400 Aux Cabinet Typeform Breakdown – 10 – 30kVA (OSHDP)		
Char.	Key	Meaning and Description
1 – 2	Product line	44: 4400 Series
3	Revision Number	0: 4400 Rev 0
4	Product Designator	A: Auxiliary cabinet with MBS/PDU/Sub-Feed Breakers- No transformer
5 – 7	kVA Capacity	100: 10kVA 150: 15kVA 200: 20kVA 250: 25kVA 300: 30kVA
8	MBS Option	M: 3 Breaker Scheme with SKRU X: No MBS installed
9	MBS Voltage	F: 208/120V 4 wire + Gnd X: No MBS installed
10	Power Distribution Panel	P: 42-Pole PDP (Power Distribution Panel) —: Dash for OSHDP seismic certified models without Power Distribution Panel. The 10th digit after the dash is an S for OSHDP Certified modes.
11	Mfg. Specific **	n: Alpha characters Examples: O – OEM Vendor, T – OEM Vendor, P – OEM Vendor, S – OEM Vendor, A – OEM Vendor, V – OEM Vendor, C – OEM Vendor, W – OEM Vendor, X: Not used ** Mfg. Specific only affect color, branding and/or labels (i.e. cosmetic changes)
12-13	OSHDP Designator	—S: OSHDP Special Seismic Certified (always last characters of Typeform)

Figure 3: 4400 Aux Cabinet Typeform Breakdown - 40-80kVA

FOR REFERENCE ONLY

Digit#	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Sample 1 Typeform	<u>4</u>	<u>4</u>	<u>0</u>	<u>A</u>	<u>5</u>	<u>0</u>	<u>0</u>	<u>M</u>	<u>F</u>	<u>P</u>	<u>X</u>	<u>X</u>	<u>S</u>	<u>3</u>	<u>A</u>	<u>P</u>	<u>=</u>	<u>S</u>

4400 Aux Cabinet Typeform Breakdown – 40 – 80kVA (OSHDP)		
Char.	Key	Meaning and Description
1 – 2	Product line	44: 4400 Series
3	Revision Number	0: 4400 Rev 0
4	Product Designator	A: Auxiliary cabinet with MBS/PDU/Sub-Feed Breakers
5 – 7	kVA Capacity	400: 40kVA 500: 50kVA 600: 60kVA 800: 80kVA
8	MBS Option	M: 3 Breaker horizontal line-up with SKRU X: No MBS installed
9	MBS Voltage	F: 208/120V 4 wire + Gnd X: No MBS installed
10	Power Distribution Module located at Top-Left Slot	P: 42-Pole PDP (Power Distribution Panel) S: Sub Feed Breaker Panel X: No Distribution Module installed
11	Number of Sub Feed Breakers located at Top-Left Slot	1: One Sub Feed Breaker 2: Two Sub Feed Breaker 3: Three Sub Feed Breaker X: No Sub Feed Breaker Module installed
12	Amperage of Sub Feed Breakers located at Top-Left Slot	A: 100A Sub Feed Breaker(s) B: 150A Sub Feed Breaker(s) C: 200A Sub Feed Breaker(s) X: No Sub Feed Breaker Module installed
13	<u>50-80kVA:</u> Top-Right Slot	P: 42-Pole PDP (Power Distribution Panel) S: Sub Feed Breaker Panel X: No Distribution Module installed
14	<u>50-80kVA:</u> Top-Right Slot	1: One Sub Feed Breaker 2: Two Sub Feed Breaker 3: Three Sub Feed Breaker X: No Sub Feed Breaker Module installed
15	<u>50-80kVA:</u> Top-Right Slot	A: 100A Sub Feed Breaker(s) B: 150A Sub Feed Breaker(s) C: 200A Sub Feed Breaker(s) X: No Sub Feed Breaker Module installed
16	Mfg. Specific **	n: Alpha characters Examples: O – OEM Vendor, T – OEM Vendor, P – OEM Vendor, S – OEM Vendor, A – OEM Vendor, V – OEM Vendor, C – OEM Vendor, W – OEM Vendor, X: Not used ** Mfg. Specific only affect color, branding and/or labels (i.e. cosmetic changes)
17-18	OSHDP Designator	=S: OSHDP Special Seismic Certified (always last characters of Typeform)

Figure 4: 4400 Battery Systems Typeform Breakdown - 10-80kVA

FOR REFERENCE ONLY

Digit#	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Sample 1 Typeform	<u>4</u>	<u>4</u>	<u>0</u>	<u>B</u>	<u>8</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>1</u>	<u>0</u>	<u>E</u>	<u>R</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>P</u>	<u>=</u>	<u>S</u>

4400 Battery Systems Typeform Breakdown – 10 – 80kVA (OSHPD)		
Char.	Key	Meaning and Description
1 – 2	Product line	44: 4400 Series
3	Battery Cabinet Factory	0: Toshiba International Corporation Manufactured BC
4	Product Designator	B: Battery Cabinet
5 – 7	kVA Capacity	100: 10kVA 150: 15kVA 200: 20kVA 250: 25kVA 300: 30kVA 500: 50kVA 800: 80kVA
8 – 10	UPS Estimated Runtime in Minutes @ 0.8PF (kVA specific)	Examples: 010: 10 minutes (80kVA), 017: 17 minutes (30kVA) , 020: 20 minutes (50kVA) XXX: different times for other 10,15,20,25KVA Units
11	Battery Type	E: Enersys
12	DC Bus Nominal Voltage	R: 288 V
13	Number of Cabinets	1: Single cabinet (Always one, BC's sold individually)
14	Number of Battery Strings in Cabinet	1: 1 Battery String
15	Number of Breakers per Cabinet	1: One Breaker per Cabinet
16	Mfg. Specific **	n: Alpha characters Examples: O – OEM Vendor, T – OEM Vendor, P – OEM Vendor, S – OEM Vendor, A – OEM Vendor, V – OEM Vendor, C – OEM Vendor, W – OEM Vendor, X: Not used ** Mfg. Specific only affect color, branding and/or labels (i.e. cosmetic changes)
17-18	OSHPD Designator	=S: OSHPD Special Seismic Certified (always last characters of Typeform)

Figure 5: 4401 UPS Typeform Breakdown (OSHDP)

FOR REFERENCE ONLY

Digit#	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Sample 1 Typeform	<u>4</u>	<u>4</u>	<u>0</u>	<u>1</u>	<u>F</u>	<u>3</u>	<u>F</u>	<u>5</u>	<u>0</u>	<u>0</u>	<u>F</u>	<u>A</u>	<u>E</u>	<u>0</u>	<u>=</u>	<u>S</u>

4401 UPS Typeform Breakdown – 30-60KVA (OSHDP)		
Char	Key	Meaning and Description
1 – 2	Product line	44: 4400 Series
3 – 4	Product Version	01: UPS Voltage Topology 208/120 In and Out (3Phase/4 Wire+G) – (4300 / 4320 Series conversion to 4400 Series)
5	Input Voltage options: (F: 208/120V is standard Voltage Topology for UPS Input, output and Alternate bypass. G: 220/127 is achieved by software setting changes)	Voltage Configurations (includes Auto or Isolation Transformers for Voltages other than 208/120 UPS Topology) Primary Input (5) / Output (7) / Alternate Bypass (11) F: 208/120V 4 wire + Gnd – (UPS Voltage platform, No Transformer) G: 220/127V 4 wire + Gnd – (UPS Voltage platform, No Transformer) X: No separate Alternate bypass (11 th digit only)
6	Input/Output Phases	3: 3 Phase Input/3 Phase Output
7	Output Voltage options	See 5.
8 – 10	kVA Capacity	300: 30kVA Output Power 400: 40kVA Output Power 500: 50kVA Output Power 600: 60kVA Output Power
11	Alternate Bypass Voltage	See 5.
12	Output Frequency	5: 50 Hz (Set Hard) 6: 60 Hz (Set Hard) A: Auto-sense (standard)
13	Destination	E: Europe N: North America
14	Mfg. Specific **	n: Alpha characters Examples: O – OEM Vendor, T – OEM Vendor, P – OEM Vendor, S – OEM Vendor, A – OEM Vendor, V – OEM Vendor, C – OEM Vendor, W – OEM Vendor, X: Not used ** Mfg. Specific only affect color, branding and/or labels (i.e. cosmetic changes)
15-16	OSHDP Designator	=S: OSHDP Special Seismic Certified (always last characters of Typeform)

Figure 6: 4401 Aux Cabinet Typeform Breakdown – 30-60kVA

FOR REFERENCE ONLY

Digit#	1	2	3	4	5	6	7	8	9	10	11	12	13
Sample 1 Typeform	<u>4</u>	<u>4</u>	<u>H</u>	<u>A</u>	<u>3</u>	<u>0</u>	<u>0</u>	<u>S</u>	<u>X</u>	<u>K</u>	<u>O</u>	<u>=</u>	<u>S</u>

4401 Aux Cabinet Typeform Breakdown – 30-60kVA (OSHDPD)		
Char.	Key	Meaning and Description
1 – 2	Product line	44: 4400 Series
3	Revision Number	H: 4300 / 4320 Series conversion to 4400 Series
4	Product Designator	A: Auxiliary cabinet With Isolation or Auto Transformers
5 – 7	kVA Capacity	300: 30kVA 400: 40kVA 500: 50kVA 600: 60kVA
8	Cabinet input Voltage	F: 208/120V 4 wire + Gnd – (No Transformer) G: 220/127V 4 wire + Gnd – (UPS Voltage platform, No Transformer) H: 380/220V Auto-Xfmr (3-Phase/4-Wire +Gnd) I: 400/230V Auto-Xfmr (3-Phase/4-Wire +Gnd) J: 415/240V Auto-Xfmr (3-Phase/4-Wire +Gnd) K: 480/277V Auto-Xfmr (3-Phase/4-Wire +Gnd) M: 380V Iso Xfmr (3-Phase/3-Wire +Gnd) N: 400V Iso Xfmr (3-Phase/3-Wire +Gnd) P: 415V Iso Xfmr (3-Phase/3-Wire +Gnd) S: 480V Iso Xfmr (3-Phase/3-Wire +Gnd) X: No Transformer (digit place holder)
9	Cabinet Alternate input Voltage	See 8
10	Cabinet output Voltage	See 8
11	Mfg. Specific **	n: Alpha characters Examples: O – OEM Vendor, T – OEM Vendor, P – OEM Vendor, S – OEM Vendor, A – OEM Vendor, V – OEM Vendor, C – OEM Vendor, W – OEM Vendor, X: Not used ** Mfg. Specific only affect color, branding and/or labels (i.e. cosmetic changes)
12-13	OSHDPD Designator	=S: OSHDPD Special Seismic Certified (always last characters of Typeform)

Figure 6: 4401 MBS Cabinet Typeform Breakdown – 30-60kVA


FOR REFERENCE ONLY


Digit#	1	2	3	4	5	6	7	8	9	10	11	12	13
Sample 1 Typeform	<u>4</u>	<u>4</u>	<u>H</u>	<u>M</u>	<u>5</u>	<u>0</u>	<u>0</u>	<u>S</u>	<u>F</u>	<u>F</u>	<u>O</u>	<u>=</u>	<u>S</u>

4401 MBS Cabinet Typeform Breakdown – 30-60kVA (OSHDP)		
Char.	Key	Meaning and Description
1 – 2	Product line	44: 4400 Series
3	Revision Number	H: 4300 / 4320 Series conversion to 4400 Series
4	Product Designator	M: Slim MBS –No Transformer, No PDU
5 – 7	kVA Capacity	300: 30kVA 400: 40kVA 500: 50kVA 600: 60kVA
8	MBS Option	S: 3 Breaker Mechanical Slide Scheme with Solenoid Release X: No MBS installed
9	Cabinet input Voltage	F: 208/120V 4 wire + Gnd G: 220/127V 4 wire + Gnd – (UPS Voltage platform, No Transformer) X: No MBS installed
10	Cabinet output Voltage	F: 208/120V 4 wire + Gnd G: 220/127V 4 wire + Gnd – (UPS Voltage platform, No Transformer) X: No MBS installed
11	Mfg. Specific **	n: Alpha characters Examples: O – OEM Vendor, T – OEM Vendor, P – OEM Vendor, S – OEM Vendor, A – OEM Vendor, V – OEM Vendor, C – OEM Vendor, W – OEM Vendor, X: Not used ** Mfg. Specific only affect color, branding and/or labels (i.e. cosmetic changes)
12-13	OSHDP Designator	— S: OSHDP Special Seismic Certified (always last characters of Typeform)

ATTACHMENT 2: TEST SPECIMEN SUMMARY


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UUT- 1 4401 UPS Cabinet (50kVA) w/ MBS Cabinet (UUT7)								
MANUFACTURER:			Toshiba International Corporation					
IDENTIFICATION:			Typeform on UUT Label		4320F3F500FA	431M500-F3MS		
			New Typeform		4401F3F500FAXX-S	44HM500SFFX-S		
DESCRIPTION:			4401 Product Line 50 kVA Single Input 208V in/out UPS Unit & 4401 Product Line 50 kVA Maintenance Bypass Cabinet (UUT7)					
MOUNTING:			Wall/Floor mounted using: <ul style="list-style-type: none">• (6) – ½" dia bolts to floor and• L2x2x1/8 (A36) brackets with (5) – 3/8" dia Allen head cap screws with washers to wall & (5) – ¼-20 hex head bolts thru cabinet frame with hex nuts.					
								
PROPERTIES:								
DIMENSIONS (in.)			Weight (lb.)	LOWEST RESONANT FREQUENCY (Hz.)				
Width	Depth	Height		FRONT-AXIS	SIDE-AXIS	VERTICAL-AXIS		
22.1+12	31.75	76	759 + 248	12.4	9.5	>50		
SHAKE TABLE TEST PARAMETERS								
CODE	TEST CRITERIA	S _{DS} (G)	z/h	I _p	A _{FLX-H} (G)	A _{RIG-H} (G)	A _{FLX-V} (G)	A _{RIG-V} (G)
CBC 2016	ICC-ES AC156	2.0	1.0	1.5	3.2	2.4	1.34	0.54
		2.5	0.0		2.5	1.0	1.68	0.68
Unit maintained structural integrity and remained functional per manufacturer requirement								

UUT- 2			4401 UPS Cabinet (30kVA)									
MANUFACTURER:			Toshiba International Corporation									
IDENTIFICATION:			Typeform on UUT Label: 4320F3F300FA									
			New Typeform: 4401F3F300FAnn-S									
DESCRIPTION:			4401 Product Line 30 kVA Dual Input UPS 208/120V inverter and bypass input - 208/120V output									
MOUNTING:			Wall/Floor mounted using: <ul style="list-style-type: none">(4) – ½" dia bolts to floor andL2x2x1/8 (A36) bracket with (5) – 3/8" dia Allen head cap screws with washers to wall & (5) – ¼-20 hex head bolts thru cabinet frame with hex nuts.									
												
						PROPERTIES:						
						DIMENSIONS (in.)			Weight (lb.)	LOWEST RESONANT FREQUENCY (Hz.)		
						Width	Depth	Height		FRONT-AXIS	SIDE-AXIS	VERTICAL-AXIS
						22.1	31.75	76	704	15.9	13.9	46.0
SHAKE TABLE TEST PARAMETERS												
CODE	TEST CRITERIA	S _{DS} (G)	z/h	I _p	A _{FLX-H} (G)	A _{RIG-H} (G)	A _{FLX-V} (G)	A _{RIG-V} (G)				
CBC 2016	ICC-ES AC156	2.0	1.0	1.5	3.2	2.4	1.34	0.54				
		2.5	0.0		2.5	1.0	1.68	0.68				
Unit maintained structural integrity and remained functional per manufacturer requirement												

ATTACHMENT 2: TEST SPECIMEN SUMMARY


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UUT- 3 4401 Auxiliary Cabinet w/ 2 isolation transformers								
MANUFACTURER:								
IDENTIFICATION:								
New Typeform:								
DESCRIPTION:								
4401 Product Line 50 kVA Auxiliary cabinet with two multi tapped transformer for 480 Volt input and 480V output configuration.								
MOUNTING:								
Wall/Floor mounted using: <ul style="list-style-type: none">(4) – ½" dia bolts to floor andL2x2x1/8 (A36) bracket with (3) – 3/8" dia Allen head cap screws with washers to wall & (3) – ¼-20 hex head bolts thru cabinet frame with hex nuts.								
PROPERTIES:								
DIMENSIONS (in.)			Weight (lb.)	LOWEST RESONANT FREQUENCY (Hz.)				
Width	Depth	Height		FRONT-AXIS	SIDE-AXIS	VERTICAL-AXIS		
22.1	31.75	76		12.7	10.0	>50		
SHAKE TABLE TEST PARAMETERS								
CODE	TEST CRITERIA	S _{DS} (G)	z/h	I _p	A _{FLX-H} (G)	A _{RIG-H} (G)	A _{FLX-V} (G)	A _{RIG-V} (G)
CBC 2016	ICC-ES AC156	2.0 2.5	1.0 0.0	1.5	3.2 2.5	2.4 1.0	1.34 1.68	0.54 0.68
Unit maintained structural integrity and remained functional per manufacturer requirement								

UUT- 4 4401 Auxiliary Cabinet w/ 1 isolation transformer									
MANUFACTURER:				Toshiba International Corporation					
IDENTIFICATION:				Typeform on UUT Label: 431A30SXXXX					
				New Typeform:		44HA300SXXX-S			
DESCRIPTION:				4401 Product Line 30kVA Auxiliary cabinet with one multi tapped transformer for multiple Voltage configurations for either input or output.					
MOUNTING:				Wall/Floor mounted using:					
				<ul style="list-style-type: none">• (4) – ½” dia bolts to floor and• L2x2x1/8 (A36) bracket with (3) – 3/8” dia Allen head cap screws with washers to wall & (3) – ¼-20 hex head bolts thru cabinet frame with hex nuts.					
									
PROPERTIES:									
DIMENSIONS (in.)			Weight (lb.)	LOWEST RESONANT FREQUENCY (Hz.)					
Width	Depth	Height		FRONT-AXIS	SIDE-AXIS	VERTICAL-AXIS			
22.1	31.75	76		15.9	13.5	>50			
SHAKE TABLE TEST PARAMETERS									
CODE	TEST CRITERIA	S _{DS} (G)	z/h	I _p	A _{FLX-H} (G)	A _{RIG-H} (G)	A _{FLX-V} (G)	A _{RIG-V} (G)	
CBC 2016	ICC-ES AC156	2.0	1.0	1.5	3.2	2.4	1.34	0.54	
		2.5	0.0		2.5	1.0	1.68	0.68	
Unit maintained structural integrity and remained functional per manufacturer requirement									


ATTACHMENT 2: TEST SPECIMEN SUMMARY


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UUT- 7			4401 MBS Cabinet					
MANUFACTURER:			Toshiba International Corporation					
IDENTIFICATION:			Typeform on UUT Label: 431M500-F3MS					
			New Typeform: 44HM500SFFX-S					
DESCRIPTION:			4401 Product Line UPS 3 breaker Maintenance Bypass Cabinet with Mechanical Interlock (Slide Bar) with Solenoid Release.					
MOUNTING:			Wall/Floor mounted using: <ul style="list-style-type: none">(4) – ½" dia bolts to floor andL2x2x1/8 (A36) bracket with (2) – 3/8" dia Allen head cap screws with washers to wall & (2) – ¼-20 hex head bolts thru cabinet frame with hex nuts.					
								
PROPERTIES:								
DIMENSIONS (in.)			Weight (lb.)	LOWEST RESONANT FREQUENCY (Hz.)				
Width	Depth	Height		FRONT-AXIS	SIDE-AXIS	VERTICAL-AXIS		
12	31.75	76	248.5	15.9	10.0	11.0		
SHAKE TABLE TEST PARAMETERS								
CODE	TEST CRITERIA	S _{DS} (G)	z/h	I _P	A _{FLX-H} (G)	A _{RIG-H} (G)	A _{FLX-V} (G)	A _{RIG-V} (G)
CBC 2016	ICC-ES AC156	2.0 2.5	1.0 0.0	1.5	3.2 2.5	2.4 1.0	1.34 1.68	0.54 0.68
Unit maintained structural integrity and remained functional per manufacturer requirement								

ATTACHMENT 2: TEST SPECIMEN SUMMARY


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UUT-8 4400 UPS Cabinet (80kVA) w/ one internal transformer									
MANUFACTURER: Toshiba International Corporation									
IDENTIFICATION: Typeform on UUT Label: 4400S3F800XA									
New Typeform: 4400S3F800XAXNX-S									
DESCRIPTION: 4400 Product Line UPS - 80kVA 72kW – 480V 3 wire + ground input – 208/120V 4 wire + ground alternate bypass input -208/120V 4 wire + ground output									
MOUNTING: Wall/Floor mounted using: <ul style="list-style-type: none">(4) – ½" dia bolts to floor andL2x2x1/8 (A36) bracket with (3) – 3/8" dia Allen head cap screws with washers to wall & (3) – ¼-20 hex head bolts thru cabinet frame with hex nuts.									
PROPERTIES:									
DIMENSIONS (in.)			Weight (lb.)	LOWEST RESONANT FREQUENCY (Hz.)					
Width	Depth	Height		FRONT-AXIS	SIDE-AXIS	VERTICAL-AXIS			
32.25	37.5	76		1640	9.2	9.7	44.2		
SHAKE TABLE TEST PARAMETERS									
CODE	TEST CRITERIA	S _{DS} (G)	z/h	I _P	A _{FLX-H} (G)	A _{RIG-H} (G)	A _{FLX-V} (G)	A _{RIG-V} (G)	
CBC 2016	ICC-ES AC156	2.0 2.5	1 0	1.5	3.2 2.5	2.4 1.0	1.34 1.68	0.54 0.68	
Unit maintained structural integrity and remained functional per manufacturer requirement									

UUT-9										4400 UPS Cabinet (50kVA) w/ internal back-up batteries (Yuasa 150)									
MANUFACTURER:					Toshiba International Corporation														
IDENTIFICATION:					Typeform on UUT Label: 4400F3F500XAB														
					New Typeform: 4400F3F500XABNX-S														
DESCRIPTION:					4400 Product Line UPS - 50kVA 45kW – 208/120V 4 wire + ground input – 208/120V 4 wire + ground output w/ internal batteries allowing 8.5 min backup at 50kVA .8pf load. (YUASA NPX-150RFR)														
MOUNTING:					Wall/Floor mounted using: <ul style="list-style-type: none">(6) – ½” dia bolts to floor andBRKT, TOP SUPRT SEISMIC 4400 (P/N 66437) with (4) – 3/8” dia Allen head cap screws with washers to wall & (4) – 5/16-18 hex head bolts thru cabinet frame with weld nuts.														
PROPERTIES:																			
DIMENSIONS (in.)										Weight (lb.)		LOWEST RESONANT FREQUENCY (Hz.)							
Width			Depth			Height						SIDE-AXIS		FRONT-AXIS			VERTICAL-AXIS		
32.25			37.5			76				1917		8.7		41.0			7.8		
SHAKE TABLE TEST PARAMETERS																			
CODE		TEST CRITERIA			SDS (G)		z/h		IP		AFLX-H (G)		ARIG-H (G)		AFLX-V (G)		ARIG-V (G)		
CBC 2016		ICC-ES AC156			2.0 2.5		1.0 0.0		1.5		3.2 2.5		2.4 1.0		1.34 1.68		0.54 0.68		
Unit maintained structural integrity and remained functional per manufacturer requirement																			

ATTACHMENT 2: TEST SPECIMEN SUMMARY


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UUT- 10 4400 UPS Cabinet (30kVA) w/ internal back-up batteries								
MANUFACTURER:		Toshiba International Corporation						
IDENTIFICATION:		Typeform on UUT Label: 4400F3F300XAB						
		New Typeform: 4400F3F300XABNX-S						
DESCRIPTION:		4400 Product Line UPS - 30kVA 27kW – 208/120V 4 wire + ground input – 208/120V 4 wire + ground output w/ internal batteries allowing 3 min backup at 30kVA .8pf load Yuasa NPX-L35FR batteries						
MOUNTING:		Wall/Floor mounted using: <ul style="list-style-type: none">• (4) – ½" dia bolts to floor and• BRKT SEISMIC 4400 (P/N 93437) w/ (2) – 3/8" dia Allen head cap screws with washers to wall & (2) – 5/16-18 hex head bolts thru cabinet frame with hex nuts.						
PROPERTIES:								
DIMENSIONS (in.)			Weight (lb.)	LOWEST RESONANT FREQUENCY (Hz.)				
Width	Depth	Height		SIDE-AXIS	FRONT-AXIS	VERTICAL-AXIS		
20.25	37.5	67.8	806	9.5	9.8	17.9		
SHAKE TABLE TEST PARAMETERS								
CODE	TEST CRITERIA	S _{DS} (G)	z/h	I _P	A _{FLX-H} (G)	A _{RIG-H} (G)	A _{FLX-V} (G)	A _{RIG-V} (G)
CBC 2016	ICC-ES AC156	2.0 2.5	1.0 0.0	1.5	3.2 2.5	2.4 1.0	1.34 1.68	0.54 0.68
Unit maintained structural integrity and remained functional per manufacturer requirement								

UUT-114400 UPS Cabinet (30kVA) w/ two internal transformer									
MANUFACTURER:				Avnet Technologies Solutions					
IDENTIFICATION:				Typeform on UUT Label: 4400S3K300XA					
				New Typeform: 4400S3K300XAXNX-S					
DESCRIPTION:				4400 Product Line UPS - 30kVA 27kW – 480V 3 wire + ground input – 208/120V 4 wire + ground output					
MOUNTING:				Wall/Floor mounted using:					
				<ul style="list-style-type: none">(6) – ½” dia bolts to floor andBRKT SEISMIC 4400 (P/N 93437) w/ (2) – 3/8” dia Allen head cap screws with washers to wall & (2) – 5/16-18 hex head bolts thru cabinet frame with hex nuts.					
									
PROPERTIES:									
DIMENSIONS (in.)						LOWEST RESONANT FREQUENCY (Hz.)			
Width	Depth	Height	Weight (lb.)			SIDE-AXIS	FRONT-AXIS	VERTICAL-AXIS	
20.25	37.5	67.8				981	8.8	>50	21.1
SHAKE TABLE TEST PARAMETERS									
CODE	TEST CRITERIA	S _{DS} (G)	z/h	I _P	A _{FLX-H} (G)	A _{RIG-H} (G)	A _{FLX-V} (G)	A _{RIG-V} (G)	
CBC 2016	ICC-ES AC156	2.0 2.5	1.0 0.0	1.5	3.2 2.5	2.4 1.0	1.34 1.68	0.54 0.68	
Unit maintained structural integrity and remained functional per manufacturer requirement									

ATTACHMENT 2: TEST SPECIMEN SUMMARY



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UUT- 12 4400 Auxiliary Cabinet (80kVA) w/ MBS/PDP/Sub-Feed									
MANUFACTURER:									
IDENTIFICATION:									
New Typeform:									
DESCRIPTION:									
MOUNTING:									
Toshiba International Corporation									
Typeform on UUT Label: 440A800MFS3CP									
440A800MFS3CPXXX-S									
400 Product Line 80kVA matching MBS auxiliary cabinet with 42 pole PDU and 2 sub feed breakers									
Wall/Floor mounted using: <ul style="list-style-type: none">(4) – ½” dia bolts to floor andL2x2x1/8 (A36) bracket w/ (4) – 3/8” dia Allen head cap screws with washers to wall & (4) – ¼-20 hex head bolts thru cabinet frame with hex nuts.									
PROPERTIES:									
DIMENSIONS (in.)			Weight (lb.)	LOWEST RESONANT FREQUENCY (Hz.)					
Width	Depth	Height		SIDE-AXIS	FRONT-AXIS	VERTICAL-AXIS			
32.25	37.5	76	517	9.6	9.7	19.0			
SHAKE TABLE TEST PARAMETERS									
CODE	TEST CRITERIA	S _{DS} (G)	z/h	I _p	A _{FLX-H} (G)	A _{RIG-H} (G)	A _{FLX-V} (G)	A _{RIG-V} (G)	
CBC 2016	ICC-ES AC156	2.0	1.0	1.5	3.2	2.4	1.34	0.54	
		2.5	0.0		2.5	1.0	1.68	0.68	
Unit maintained structural integrity and remained functional per manufacturer requirement									

UUT- 13 4400 Auxiliary Cabinet (30kVA) w/ MBS/PDP						
MANUFACTURER: Toshiba International Corporation						
IDENTIFICATION: Typeform on UUT Label: 440A800MFS3CP						
New Typeform:						

ATTACHMENT 2: TEST SPECIMEN SUMMARY

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UUT- 14 4400 Battery Cabinet (80kVA) w/ HX-400									
MANUFACTURER:  Toshiba International Corporation									
IDENTIFICATION: Typeform on UUT Label: 440A800MFS3CP									
New Typeform: 440B800010ER111X-S									
DESCRIPTION: 4400 Product Line 80kVA Matching Battery Cabinet – 288Vdc nominal – w/ 400A DC disconnect - 10 min @80kVA .8pf .									
MOUNTING: Wall/Floor mounted using: <ul style="list-style-type: none">• (4) – ½" dia bolts to floor and• BRKT, TOP SUPRT SEISMIC 4400 (P/N 66437) w/ (4) – 3/8" dia Allen head cap screws with washers to wall• (4) – 5/16-18 hex head bolts thru cabinet frame with hex nuts.									
PROPERTIES:									
DIMENSIONS (in.)				Weight (lb.)	LOWEST RESONANT FREQUENCY (Hz.)				
Width	Depth	Height	FRONT-AXIS		SIDE-AXIS	VERTICAL-AXIS			
32.25	37.5	76	8.7		7.6	37.7			
SHAKE TABLE TEST PARAMETERS									
CODE	TEST CRITERIA	S _{DS} (G)	z/h	I _p	A _{FLX-H} (G)	A _{RIG-H} (G)	A _{FLX-V} (G)	A _{RIG-V} (G)	
CBC 2016	ICC-ES AC156	2.0 2.5	1 0	1.5	3.2 2.5	2.4 1.0	1.34 1.68	0.54 0.68	
Unit maintained structural integrity and remained functional per manufacturer requirement									

UUT-15 4400 Battery Cabinet (30kVA) w/ HX-205								
MANUFACTURER:			Toshiba International Corporation					
IDENTIFICATION:			Typeform on UUT Label: 440B300017ER111					
			New Typeform: 440B300017ER111X-S					
DESCRIPTION:			4400 Product Line 30kVA Matching Battery Cabinet – 288Vdc nominal – w/ 150A DC disconnect - 17 min @30kVA .8pf					
MOUNTING:			Wall/Floor mounted using (4) – ½" dia bolts to floor and (2) – 3/8" dia bolts to wall Wall/Floor mounted using: <ul style="list-style-type: none">(4) – ½" dia bolts to floor andBRKT SEISMIC 4400 (P/N 93437) w/ (2) – 3/8" dia Allen head cap screws with washers to wall & (2) – 5/16-18 hex head bolts thru cabinet frame with hex nuts.					
								
PROPERTIES:								
DIMENSIONS (in.)			Weight (lb.)	LOWEST RESONANT FREQUENCY (Hz.)				
Width	Depth	Height		FRONT-AXIS	SIDE-AXIS	VERTICAL-AXIS		
20.25	37.5	67.8		7.0	9.8	30.9		
SHAKE TABLE TEST PARAMETERS								
CODE	TEST CRITERIA	S _{DS} (G)	z/h	I _p	A _{FLX-H} (G)	A _{RIG-H} (G)	A _{FLX-V} (G)	A _{RIG-V} (G)
CBC 2016	ICC-ES AC156	2.0 2.5	1 0	1.5	3.2 2.5	2.4 1.0	1.34 1.68	0.54 0.68
Unit maintained structural integrity and remained functional per manufacturer requirement								