



OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT
FACILITIES DEVELOPMENT DIVISION

APPLICATION FOR OSHPD SPECIAL SEISMIC
CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY
APPLICATION #: OSP - 0415

OSHPD Special Seismic Certification Preapproval (OSP)

Type: [] New [X] Renewal

Manufacturer Information

Manufacturer: Toshiba International Corporation

Manufacturer's Technical Representative: Jhonny Cardenas

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

Telephone: 713-466-0277 Ext.3618 Email: MV.DRIVE.SEISMICS@TIC.TOSHIBA.COM

Product Information

Product Name: YORK OptiSpeed Drives; Toshiba T300MVi Drives &

Product Type: Medium Voltage Adjustable Speed Drives

Product Model Number: See Attachment 1, Table 1
(List all unique product identification numbers and/or part numbers)

General Description: Medium Voltage Adjustable Speed Drives for the control of AC induction motors. 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 Base mount.

Applicant Information

Applicant Company Name: EASE

Contact Person: Jonathan Roberson, S.E.

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

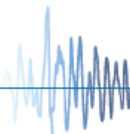
Telephone: (909) 606-7622 Email: j.roberson@easeco.com

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: [Signature] Date: 7/2/2019

Title: Principal Structural Engineer Company Name: EASE

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





**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

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): _____

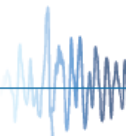
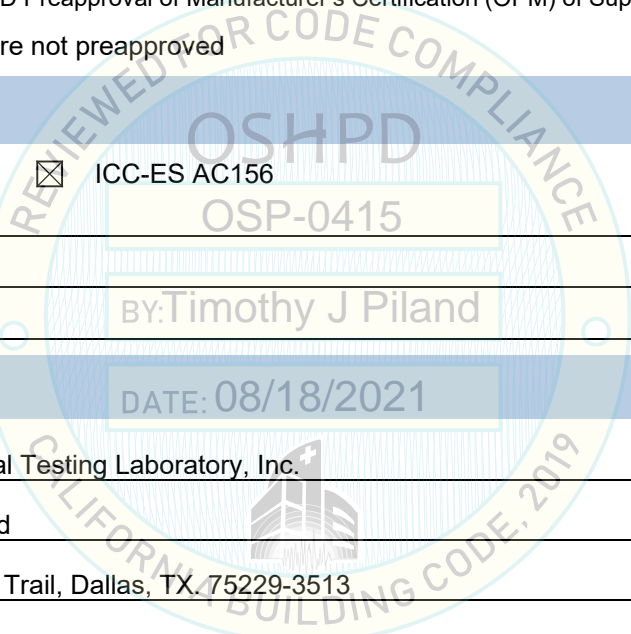
Testing Laboratory

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) = 1.17 (z/h = 1); 1.13 (z/h = 0);

S_{DS} (Design spectral response acceleration at short period, g) = 1.56 (z/h = 1); 2.50 (z/h = 0)

a_p (In-structure equipment or component amplification factor) = 2½

R_p (Equipment or component response modification factor) = 6

Ω_0 (System overstrength factor) = 2

I_p (Importance factor) = 1.5

z/h (Height factor ratio) = 1 (S_{DS} = 1.56); 0 (S_{DS} = 2.50)

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): Attachments 1 & 2

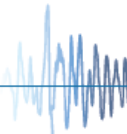
OSHPD Approval (For Office Use Only) – Approval Expires on December 31, 2025

Signature: Date: August 18, 2021

Print Name: Timothy J. Piland Title: SSE

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

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TABLE 1:

Manufacturer	TOSHIBA INTERNATIONAL CORPORATION						
Product Line	YORK Optispeed Medium Voltage Adjustable Speed Drives Toshiba T300MVi Medium Voltage Adjustable Speed Drives Toshiba T300MV2 Medium Voltage Adjustable Speed Drives						
COMPONENT	MODEL NO.	DIMENSIONS (IN.)			APPROX. WT. (LB.)	MOUNT	BASIS ^[1]
		W	D	H			
YORK, OptiSpeed 4160V,1000HP, YK OIL PUMP	TX-024-39341-313	122.0	43.4	103.7	9,200	Rigid Base	INT
YORK, OptiSpeed 4160V,1000HP, YK OIL, OSHPD	024-41456-313, MVVSD10002K-84 SI	122.0	43.4	103.7	9,200	Rigid Base	INT
YORK, OptiSpeed 4160V,1250HP, YK OIL PUMP	TX-024-39341-314	122.0	43.4	103.7	10,400	Rigid Base	INT
YORK, OptiSpeed 4160V,1250HP, YK OIL, OSHPD	024-41456-314, MVVSD12502K-84 SI	122.0	43.4	103.7	10,400	Rigid Base	INT
YORK, OptiSpeed 4160V,1500HP, YK OIL PUMP	TX-024-39341-315	122.0	43.4	103.7	11,200	Rigid Base	INT
YORK, OptiSpeed 4160V,1500HP, YK OIL, OSHPD	024-41456-315, MVVSD15002K-84 SI	122.0	43.4	103.7	11,200	Rigid Base	INT
YORK, OptiSpeed 4160V,1750HP, YK OIL PUMP	TX-024-39341-316	122.0	43.4	103.7	12,100	Rigid Base	INT
YORK, OptiSpeed 4160V,1750HP, YK OIL, OSHPD	024-41456-316, MVVSD17502K-84 SI	122.0	43.4	103.7	12,100	Rigid Base	INT
YORK, OptiSpeed 4160V,2000HP, YK OIL PUMP	TX-024-39341-317	122.0	43.4	103.7	12,700	Rigid Base	UUT-1
YORK, OptiSpeed 4160V,2000HP, YK OIL, OSHPD	024-41456-317, MVVSD20002K-84 SI	122.0	43.4	103.7	12,700	Rigid Base	INT
Toshiba T300MVi,4160V,1000HP,124A,INT	M3A44100SAAS	122.0	43.4	103.7	9,000	Rigid Base	INT
Toshiba T300MVi,4160V,1250HP,155A,INT	M3A44125SAAS	122.0	43.4	103.7	10,200	Rigid Base	INT
Toshiba T300MVi,4160V,1500HP,186A,INT	M3A44150SAAS	122.0	43.4	103.7	11,000	Rigid Base	INT
Toshiba T300MVi,4160V,1750HP,217A,INT	M3A44175SAAS	122.0	43.4	103.7	11,900	Rigid Base	INT
Toshiba T300MVi,4160V,2000HP,248A,INT	M3A44200SAAS	122.0	43.4	103.7	12,500	Rigid Base	INT
Toshiba T300MVi,4160V,1000HP,124A,EXT	M3A44100SABS	122.0	43.4	103.7	8,900	Rigid Base	INT
Toshiba T300MVi,4160V,1250HP,155A,EXT	M3A44125SABS	122.0	43.4	103.7	10,100	Rigid Base	INT
Toshiba T300MVi,4160V,1500HP,186A,EXT	M3A44150SABS	122.0	43.4	103.7	10,900	Rigid Base	INT
Toshiba T300MVi,4160V,1750HP,217A,EXT	M3A44175SABS	122.0	43.4	103.7	11,800	Rigid Base	INT
Toshiba T300MVi,4160V,2000HP,248A,EXT	M3A44200SABS	122.0	43.4	103.7	12,400	Rigid Base	INT
Toshiba T300MVi,4160V,2250HP,279A,INT	M3A44225SAAS	164.0	49.5	103.7	15,700	Rigid Base	INT
Toshiba T300MVi,4160V,2500HP,310A,INT	M3A44250SAAS	164.0	49.5	103.7	16,500	Rigid Base	INT
Toshiba T300MVi,4160V,2250HP,279A,EXT	M3A44225SABS	164.0	49.5	103.7	15,600	Rigid Base	INT
Toshiba T300MVi,4160V,2500HP,310A,EXT	M3A44250SABS	164.0	49.5	103.7	16,400	Rigid Base	INT
Toshiba T300MV2,Fr1,4160V,1000HP,124A,INT, OSHPD	M41AN44100AAA0S	122.0	43.4	103.7	9,000	Rigid Base	INT
Toshiba T300MV2,Fr1,4160V,1250HP,155A,INT, OSHPD	M41AN44125AAA0S	122.0	43.4	103.7	10,200	Rigid Base	INT
Toshiba T300MV2,Fr1,4160V,1500HP,186A,INT, OSHPD	M41AN44150AAA0S	122.0	43.4	103.7	11,000	Rigid Base	INT
Toshiba T300MV2,Fr1,4160V,1750HP,217A,INT, OSHPD	M41AN44175AAA0S	122.0	43.4	103.7	11,900	Rigid Base	INT
Toshiba T300MV2,Fr1,4160V,2000HP,248A,INT, OSHPD	M41AN44200AAA0S	122.0	43.4	103.7	12,500	Rigid Base	INT
Toshiba T300MV2,Fr1,4160V,1000HP,124A,EXT, OSHPD	M41AN44100BAA0S	122.0	43.4	103.7	8,900	Rigid Base	INT
Toshiba T300MV2,Fr1,4160V,1250HP,155A,EXT, OSHPD	M41AN44125BAA0S	122.0	43.4	103.7	10,100	Rigid Base	INT

Table continues next page

ATTACHMENT 1: SEISMIC CERTIFIED COMPONENTS

ATTACHMENT PAGE | 2 OF 4

TABLE 1:

<i>Manufacturer</i>	TOSHIBA INTERNATIONAL CORPORATION							
<i>Product Line</i>	YORK Optispeed Medium Voltage Adjustable Speed Drives Toshiba T300MVi Medium Voltage Adjustable Speed Drives Toshiba T300MV2 Medium Voltage Adjustable Speed Drives							
COMPONENT	MODEL NO.	DIMENSIONS (IN.)			APPROX. WT. (LB.)	MOUNT	BASIS ^[1]	
		W	D	H				
Toshiba T300MV2,Fr1,4160V,1500HP,186A,EXT, OSHPD	M41AN44150BAA0S	122.0	43.4	103.7	10,900	Rigid Base	INT	
Toshiba T300MV2,Fr1,4160V,1750HP,217A,EXT, OSHPD	M41AN44175BAA0S	122.0	43.4	103.7	11,800	Rigid Base	INT	
Toshiba T300MV2,Fr1,4160V,2000HP,248A,EXT, OSHPD	M41AN44200BAA0S	122.0	43.4	103.7	12,400	Rigid Base	INT	
Toshiba T300MV2,Fr2,4160V,2250HP,279A,INT, OSHPD	M42AN44225AAA0S	164.0	49.5	103.7	15,700	Rigid Base	INT	
Toshiba T300MV2,Fr2,4160V,2500HP,310A,INT, OSHPD	M42AN44250AAA0S	164.0	49.5	103.7	16,500	Rigid Base	INT	
Toshiba T300MV2,Fr2,4160V,2250HP,279A,EXT, OSHPD	M42AN44225BAA0S	164.0	49.5	103.7	15,600	Rigid Base	INT	
Toshiba T300MV2,Fr2,4160V,2500HP,310A,EXT, OSHPD	M42AN44250BAA0S	164.0	49.5	103.7	16,400	Rigid Base	INT	
YORK, OptiSpeed 4160V,2250HP, YK OIL PUMP	TX-024-39341-318	164.0	49.5	103.7	15,900	Rigid Base	INT	
YORK, OptiSpeed 4160V,2250HP, YK OIL, OSHPD	024-41456-318, MVVSD22502K-84 SI	164.0	49.5	103.7	15,900	Rigid Base	INT	
YORK, OptiSpeed 4160V,2500HP, YK OIL, OSHPD	024-41456-319, MVVSD25002K-84 SI	164.0	49.5	103.7	16,700	Rigid Base	INT	
YORK, OptiSpeed 4160V,2250HP, YK OIL, OSHPD	TX-024-39341-319	164.0	49.5	103.7	16,700	Rigid Base	UUT-2	
<i>Mounting</i>	RIGID BASE (FLOOR): a free-standing, base mounted condition with the component rigidly attached to a supporting structure and no lateral support above the base.							
<i>Enclosure</i>	Powder coated carbon steel. NEMA 1 Ventilated, & IP20 Per IEC-60529; Gasket & Filter; Free-Standing; Front-Access Only.							
<i>Notes</i>	<p>1. BASIS:</p> <ul style="list-style-type: none"> UUT#: Indicates that a test specimen matching these characteristics was tested as part of this testing program. INT (Interpolate/Extrapolate): indicates a model that was not specifically tested, and by which seismic certification is established through evaluation of testing of other, similar models in the product line. <p>2. Special Seismic Certification is limited to subcomponents listed in Table 2 and those meeting exceptions of CBC §1705A.13.3.1.</p>							

ATTACHMENT 1: SEISMIC CERTIFIED COMPONENTS

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TABLE 2: SEISMICALLY CERTIFIED SUBCOMPONENTS

SUBCOMPONENT	DESCRIPTION/RATING	MANUFACTURER	MODEL/PART NO.	BASIS
Primary Fuses	FUSE E/200E 5.5KV 12D	Mersen	PC16101P663	INT
	FUSE E/250E 5.5KV 12DD	Mersen	PC16101P671	INT
	FUSE E/300E 5.5KV 12DD	Mersen	PC16101P672	INT
	FUSE E/350E 5.5KV 12DD	Mersen	PC16101P673	UUT-1
	FUSE E/400E 5.5KV 12DD	Mersen	PC16101P674	UUT-2
Input Controller	ASSY,INPUT CONTROLLER, 7.2kV, 360A	Toshiba Int'l Corp	GCI6721G100SE-YRK	UUT-1
	ASSY,INPUT CONTROLLER, 7.2kV, 360A	Toshiba Int'l Corp	GCI6721G100SE	SAME
	ASSY,INPUT CONTROLLER, 7.2kV, 360A	Toshiba Int'l Corp	GCI6722G100SEYRK	SAME
	ASSY,INPUT CONTROLLER, 7.2kV, 360A	Toshiba Int'l Corp	GCI6722G100SE	UUT-2
Precharge Contactor	VACUUM CONTACTOR 7.2 kV, 400A	Toshiba Int'l Corp	HCV-5HA	UUT-1 UUT-2
Precharge Reactor	PRE-CHARGE REACTOR,4160V,1695kVA	Neeltran	PC34740P001	UUT-1
	PRE-CHARGE REACTOR,4160V,2119kVA	Neeltran	PC34740P002	UUT-2
Primary Transformer	XFMR,24 Pulse,4160V,1000HP, W/AUX, F1 SEISMIC	Hammond	PC32741P100S	INT
	XFMR,24 Pulse,4160V,1250HP, W/AUX SEISMIC	Hammond	PC32741P125S	INT
	XFMR,24 Pulse,4160V,1500HP, W/AUX SEISMIC	Hammond	PC32741P150S	INT
	XFMR,24 Pulse,4160V,1750HP, W/AUX SEISMIC	Hammond	PC32741P175S	INT
	XFMR,24 Pulse,4160V,2000HP, W/AUX SEISMIC	Hammond	PC32741P200S	UUT-1
	XFMR,24 Pulse,4160V,1000HP, F1 SEISMIC	Hammond	PC32740P100S	INT
	XFMR,24 Pulse,4160V,1250HP SEISMIC	Hammond	PC32740P125S	INT
	XFMR,24 Pulse,4160V,1500HP SEISMIC	Hammond	PC32740P150S	INT
	XFMR,24 Pulse,4160V,1750HP SEISMIC	Hammond	PC32740P175S	INT
	XFMR,24 Pulse,4160V,2000HP SEISMIC	Hammond	PC32740P200S	INT
	XFMR,24 Pulse,4160V,2250HP, W/AUX SEISMIC	Hammond	PC32741P225S	INT
	XFMR,24 Pulse,4160V,2500HP, W/AUX SEISMIC	Hammond	PC32741P250S	UUT-2
	XFMR,24 Pulse,4160V,2250HP SEISMIC	Hammond	PC32740P225S	INT
XFMR,24 Pulse,4160V,2500HP SEISMIC	Hammond	PC32740P250S	INT	
Rectifier Assembly	ASSY,RECTIFIERS W/ 200A FUSE PC15373P201	Toshiba Int'l Corp	GCI6721G060	INT
	ASSY,RECTIFIERS W/ 250A FUSE PC15373P250	Toshiba Int'l Corp	GCI6721G060	UUT-1
	ASSY,RECTIFIERS	Toshiba Int'l Corp	GCI6722G060	UUT-2
Power Module	ASSY,POWER MODULES,2000HP,4.16kV,BF,248A	Toshiba Int'l Corp	GCI6721G050BSE	UUT-1
	ASSY,Power Module,372A,4.16kV,HD	Toshiba Int'l Corp	GCI6722G050A	UUT-2
Fan Assembly	ASSY,FAN,SINGLE,3700CFM	Toshiba Int'l Corp	GCI6721G195-YRK	SAME

ATTACHMENT 1: SEISMIC CERTIFIED COMPONENTS

ATTACHMENT PAGE | 4 OF 4

TABLE 2: SEISMICALLY CERTIFIED SUBCOMPONENTS

SUBCOMPONENT	DESCRIPTION/RATING	MANUFACTURER	MODEL/PART NO.	BASIS
	ASSY,FAN,SINGLE,3700CFM	Toshiba Int'l Corp	GCI6721G195	UUT-1
	ASSY,FAN,3700CFM,SINGLE	Toshiba Int'l Corp	GCI6722G190	SAME
	ASSY,FAN,3700CFM,SINGLE	Toshiba Int'l Corp	GCI6722G190-YRK	UUT-2
Low Voltage Component Assembly	PWB/CNN/CTR,T300MV	Toshiba Int'l Corp	GCI6721G280I-YRK	UUT-1
	PWB/CNN/CTR,T300MV	Toshiba Int'l Corp	GCI6721G280I	INT
	PWB/CNN/CTR,YORK,2400,4.16k	Toshiba Int'l Corp	GCI6722G280I	INT
	PWB/CNN/CTR,YORK,MV2,4.16k	Toshiba Int'l Corp	GCI6721G280E-YRK	INT
	PWB/CNN/CTR,T300MV2,FR1,4.16k	Toshiba Int'l Corp	GCI6721G280E	INT
	PWB/CNN/CTR,T300MV2,FR2,4.16kV	Toshiba Int'l Corp	GCI6722G280E	INT
	PWB/CNN/CTR,YORK,MV2,4.16k	Toshiba Int'l Corp	GCI6722G280E-YRK	INT
	PWB/CNN/CTR,YORK,2400,4.16k	Toshiba Int'l Corp	GCI6722G280I-YRK	UUT-2
Output Reactor	ACL,4160V,260/195A,0.1mH,300MV	Hitran	PC34741P101	UUT-1
	ACL,4160V,380A,0.10mH,T300MV	Hitran	PC34741P102	UUT-2
York CPT	CPT 4160:460/115 3/2KVA 5K' YK	Hitran	PC33260P103	UUT-1
	CPT 4160:460/115 3/2KVA 5K' YK	Hitran	PC33260P103	UUT-2
York CPT Fuses	FU E/3E 4.8KV 5.63	Mersen	PC16109P903	UUT-1
	FU E/3E 4.8KV 5.63	Mersen	PC16109P903	UUT-2
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 (Interpolate/Extrapolate): indicates a model that was not specifically tested, and by which seismic certification is established through evaluation of testing of other, similar models in the product line 2. Special Seismic Certification is limited to identified subcomponents when installed as part of a complete assembly of the components defined in Table 1.			

ATTACHMENT 2: TEST SPECIMEN SUMMARY

UUT- 1 YORK OPTISPEED 2000HP MEDIUM VOLTAGE DRIVE								
MANUFACTURER:		Toshiba International Corporation						
IDENTIFICATION:		Model No.: MVVSD2000RK-84						
DESCRIPTION:		2000 HP, 4160 V, Frame 1 Adjustable Speed Drive YORK OptiSpeed interface, monitoring devices and control software. See Attachment 1, Table 2. <u>Optional features present in UUT:</u> 1. Seismic Configuration Option. 2. Interface, monitoring devices and control software unique to the Toshiba T300MVi brand product line. <u>Modifications to UUT made at Lab:</u> 1. Plastic cable ties added around DIN rail mounted relay in Control Section. 2. Torque on vertical tie rods securing Primary Transformers to support beam increase from 80 ft-lb to 100 ft-lb. 3. Plastic wire ties around FRP isolation shields at primary fuses.						
MOUNTING:		Rigid Base mount using (11) – 5/8" dia. hex head Gr.8 bolts w/ washers.						
PROPERTIES:								
DIMENSIONS (in.)					LOWEST RESONANT FREQUENCY (Hz.)			
Width	Depth	Height	Weight (lb.)		Side-Axis	Front-Axis	Vertical-Axis	
122	43	104	12,700		3.8	2.1	6.2	
SHAKE TABLE TEST PARAMETERS								
CODE	TEST CRITERIA	SDS	z/h	Ip	AFLX-H	ARIG-H	AFLX-V	ARIG-V
CBC 2016	ICC-ES AC156	1.56 2.00	1 0	1.5	2.50 2.50	1.87 1.00	1.05 1.68	0.42 0.68
Unit maintained structural integrity and functionality after the ICC-ES AC 156 test								



UUT- 2 YORK OPTISPEED 2500HP MEDIUM VOLTAGE DRIVE								
MANUFACTURER:		Toshiba International Corporation						
IDENTIFICATION:		Model No.: MVVSD2500RK-84						
DESCRIPTION:		2500 HP, 4160 V, Frame 2 Adjustable Speed Drive YORK OptiSpeed interface, monitoring devices and control software. See Attachment 1, Table 2. <u>Optional features present in UUT:</u> • Seismic Configuration Option. • Interface, monitoring devices and control software unique to the Toshiba T300MVi brand product line. <u>Modifications to UUT made at Lab:</u> Plastic cable ties added around DIN rail mounted relay in Control Section.						
MOUNTING:		Rigid Base mount using (16) – 5/8" dia. hex head Gr.8 bolts w/ washers						
PROPERTIES:								
DIMENSIONS (in.)					LOWEST RESONANT FREQUENCY (Hz.)			
Width	Depth	Height	Weight (lb.)		Side-Axis	Front-Axis	Vertical-Axis	
164	50	104	16,700		2.5	9.3	5.2	
SHAKE TABLE TEST PARAMETERS								
CODE	TEST CRITERIA	S _{DS}	z/h	I _P	AFLX-H	ARIG-H	AFLX-V	ARIG-V
CBC 2016	ICC-ES AC156	1.56 2.00	1 0	1.5	2.50 2.50	1.87 1.00	1.05 1.68	0.42 0.68
Unit maintained structural integrity and functionality after the ICC-ES AC 156 test								

