



**OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT
FACILITIES DEVELOPMENT DIVISION**

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

OFFICE USE ONLY

APPLICATION #: OSP-0675

OSHPD Special Seismic Certification Preapproval (OSP)

Type: New Renewal

Manufacturer Information

Manufacturer: Carestream Healthcare, Inc.

Manufacturer's Technical Representative: Christopher Kralles

Mailing Address: 1049 Ridge Road West, Rochester, NY 14615

Telephone: On File Email: On File

Product Information

Product Name: Fluoroscopy and Radiography Systems

Product Type: NA

Product Model Number: DRX-Excel Plus

General Description: Multiple component digital radiography and fluoroscopy medical diagnostic imaging system.

Mounting Description: See Certified Product Tables

Tested Seismic Enhancements: Seismic enhancements made to the test units and/or modifications required to address anomalies during the tests shall be incorporated into the production units.

Applicant Information

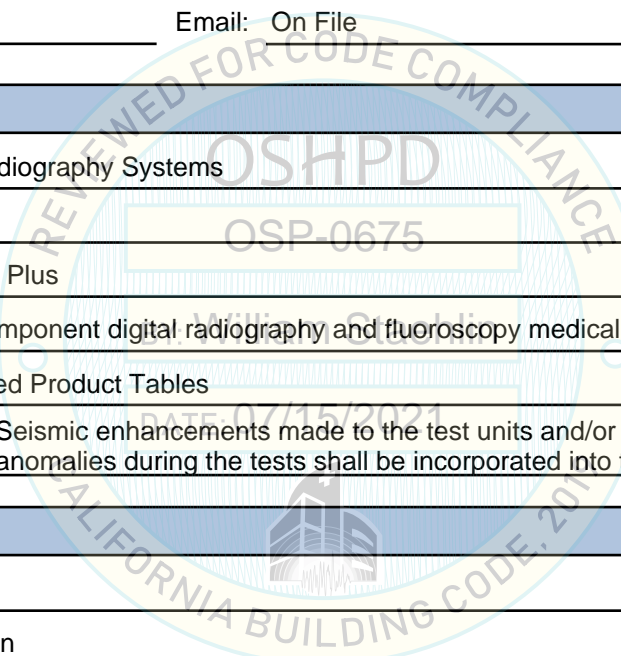
Applicant Company Name: EASE

Contact Person: Jonathan Roberson

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

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

Title: Principal





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

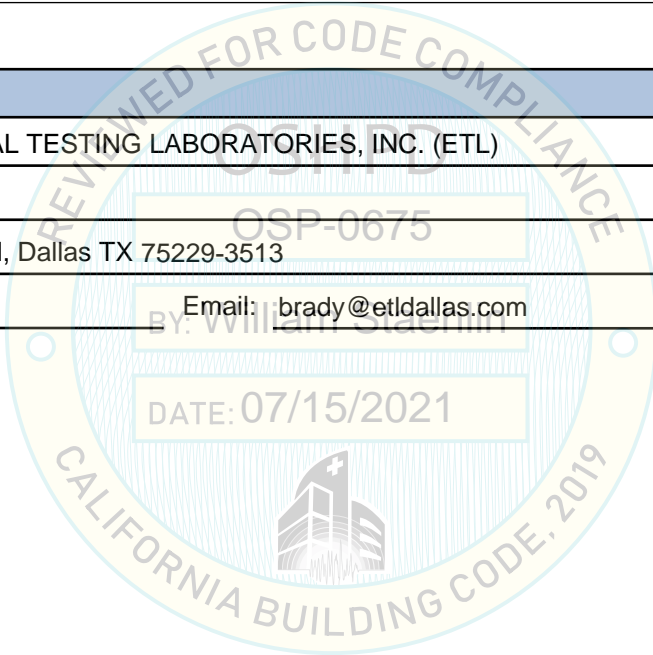
Company Name: EASE
Name: Jonathan Roberson California License Number: S4197
Mailing Address: 5877 Pine Ave., Suite 210, Chino Hills, CA 91709
Telephone: (951) 295-1892 Email: jon@EASECo.com

Certification Method

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

Testing Laboratory

Company Name: ENVIRONMENTAL TESTING LABORATORIES, INC. (ETL)
Contact Person: Brady Richard
Mailing Address: 11034 Indian Trail, Dallas TX 75229-3513
Telephone: (972) 247-9657 Email: brady@etldallas.com





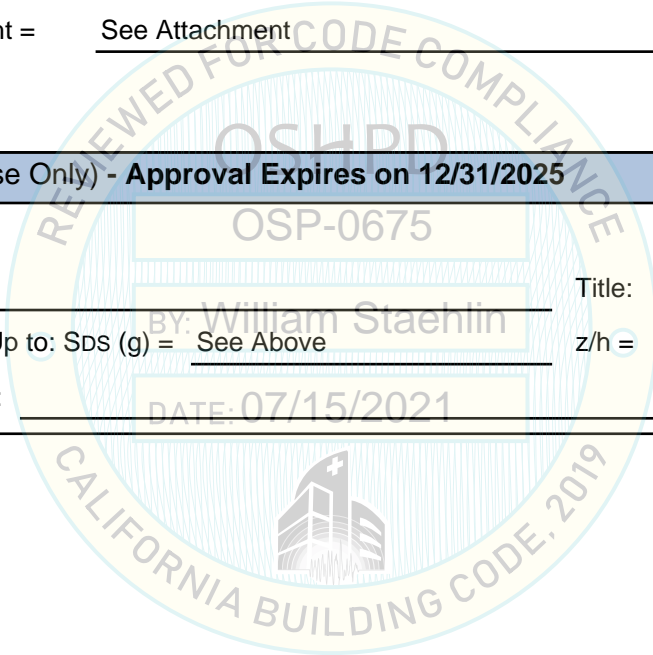
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Seismic Parameters

Design Basis of Equipment or Components (F_p/W_p) =	<u>See Attachment</u>
SDS (Design spectral response acceleration at short period, g) =	<u>See Attachment</u>
a_p (Amplification factor) =	<u>See Attachment</u>
R_p (Response modification factor) =	<u>See Attachment</u>
Ω_0 (System overstrength factor) =	<u>2.0</u>
I_p (Importance factor) =	<u>1.5</u>
z/h (Height ratio factor) =	<u>1 and 0</u>
Natural frequencies (Hz) =	<u>See Attachment</u>
Overall dimensions and weight =	<u>See Attachment</u>

OSHPD Approval (For Office Use Only) - Approval Expires on 12/31/2025

Date:	<u>7/15/2021</u>		
Name:	<u>William Staehlin</u>	Title:	<u>Senior Structural Engineer</u>
Special Seismic Certification Valid Up to: SDS (g) =	<u>See Above</u>	z/h =	<u>See Above</u>
Condition of Approval (if applicable):	<u></u>		



ATTACHMENT 1: SEISMIC CERTIFIED COMPONENTS

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TABLE 1:

System Manufacturer		Carestream Health, Inc.						$S_{DS} = 2.0$ at $z/h = 1$ $S_{DS} = 2.5$ at $z/h = 0$				
System		DRX-Excel Plus										
COMPONENT	IDENTIFICATION NUMBER ^[4] ^[5]	APPROX. DIMENSIONS (IN.)			APPROX. WT. (LB.)	MOUNT	BASIS ^[1]	F _P /W _P	a _P	R _P	Ω ₀	
		W	D	H								
PATIENT TABLE												
R/F Table (Apelem) ^[2]	Z6F35541	114.4	93.1	111.3	4046 ^[3]	Rigid Base	UUT-2001-1	2.40 1.13	1	1 ½	2	
CEILING SUSPENSION												
Ceiling Suspension (w/ Dual Monitor & Lead Shield) (Mavig), including:												
Carriage Track	< TS10U05 >											
Column / Carriage	< TST20U31-MA >											
Dual Monitor Support	< GD42U20 >	157.48	13.2	83.5	192	Ceiling	UUT-2001-6	3.60 1.50	2 ½	2 ½	2	
Lead Shield	< OT40B03 >											
Extension Springarm 1	< OT50U010 >											
Extension Springarm 2	< OT60U030 >											
19" LCD Monitors (WIDE Corporation)	< MX10P >											
CONSOLES												
Detector Cabinet (Apelem) ^[2]	Z5Z35156	22.0	24.7	32.0	237	Rigid Base	UUT-2001-5	1.50 1.13	2 ½	6	2	
MPU Computer (Thales) ^[2]	63105896	8.3	22.9	18.3	44.5	Rigid Base	UUT-2001-8	1.44 1.13	1	2 ½	2	
POWER DISTRIBUTION												
PDU (Apelem)	Z6F35516	30.0	12.0	30.0	129	Wall	UUT-2001-2	1.50 1.13	2 ½	6	2	
480/240 Transformer for PDU (Emerson)	HS5F5AS	10.0	9.1	16.9	115	Wall	UUT-2001-3	1.50 1.13	2 ½	6	2	
Magnum 80 Generator (Apelem / CPI) ^[2]	Z6F35769	20.5	16.5	43.5	219	Rigid Base	UUT-2001-4	1.50 1.13	2 ½	6	2	
USER INTERFACE												
Control Console (Apelem) ^[2]	Z7E35094	21.3	12.8	5.5	18.0	CTA	UUT-2001-7	1.44 1.13	1	2 ½	2	
Keyboard (Logitech) ^[2]	820-007639	17.75	6.25	0.90	1.0	CTA	UUT-2001-9	1.44 1.13	1	2 ½	2	

Table continued next page

ATTACHMENT 1: SEISMIC CERTIFIED COMPONENTS

ATTACHMENT PAGE | 2 OF 2

TABLE 1:

System Manufacturer		Carestream Health, Inc.						$S_{DS} = 2.0$ at $z/h = 1$ $S_{DS} = 2.5$ at $z/h = 0$			
System		DRX-Excel Plus									
COMPONENT	IDENTIFICATION NUMBER ^[4] ^[5]	APPROX. DIMENSIONS (IN.)			APPROX. WT. (LB.)	MOUNT	BASIS ^[1]	F _P /W _P	a _P	R _P	Ω ₀
		W	D	H							
19" LCD Monitor (WIDE Corporation)	< MX10P >	17.25	6.25	14.25	10	CTA	UUT-2001-10	1.44 1.13	1	2 ½	2
with Desk Mount (Peerless)	LCT100S										
23" LCD Monitor (Eizo)	< FlexScan EV2450 >	21.25	6.75	12.5	7.5	CTA	UUT-2001-11	1.44 1.13	1	2 ½	2
with Desk Mount (Peerless)	LCT100S										
Mount	<p><u>RIGID BASE</u>: free-standing, base-mounted tower configuration with the component rigidly attached to a supporting structure and no lateral support above the base.</p> <p><u>CTA (Countertop, Anchored)</u>: unit is anchored to a counter, desk, or other piece of fixed furniture.</p> <p><u>WALL</u>: component fully supported by a building wall structure</p> <p><u>CEILING</u>: unit is anchored to and suspended from a framing system at the ceiling line of the room.</p>										
Notes	<ol style="list-style-type: none"> BASIS: <ul style="list-style-type: none"> UUT#: Indicates that a test specimen matching these characteristics was tested as part of this testing program. Requires use of Carestream DRX-Excel Plus System Seismic Kit P/N: AJ6928 Patient table weight does not include 468 patient weight present during test. ##### represents a part number (P/N) as the identification number for qualified component. < ##### > represents a model number (M/N) as the identification number for the qualified component 										

ATTACHMENT 2: TEST SPECIMEN SUMMARY

UUT-2001-1 R/F Table						
<i>Manufacturer:</i>		Apelem				
<i>Identification:</i>		Part No.: Z6F35541 Serial No.: M196F0WTR				
<i>Description:</i>		Component of Carestream DRX-Excel Plus System Unit tested in configuration offering least seismic withstand capacity. All modifications made during testing will be collected within and installed as part of DRX-Excel Plus System Seismic Kit P/N: AJ6928 *Patient Load of 466 lb not included in weight				
<i>Mounting:</i>		Rigid Base (Floor) mounted using (7) – 1/2" dia. SAE J429 Grade 5 Allen Head Cap Screws w/ Standard Washers				
Dimensions [in]				Lowest Resonant Frequency [Hz]		
Width	Depth	Height	Weight [lb]	Front - Axis	Side - Axis	Vert - Axis
114.4	93.1	111.3	4046*	2.63	2.71	3.46
ICC-ES AC156 Shake Table Test Parameters						Code: 2019 CBC
S _{DS} [G]	z/h	I _p	A _{FLX-H} [G]	A _{RIG-H} [G]	A _{FLX-V} [G]	A _{RIG-V} [G]
2.0	1	1.5	3.20	2.40	1.68	0.68
2.5	0					
Unit satisfied AC156 requirements for structural integrity and manufacturer requirements for functionality after AC156 test.						



UUT-2001-2 PDU						
<i>Manufacturer:</i>		Apelem				
<i>Identification:</i>		Part No.: Z6F35516 Serial No.: V13112-10				
<i>Description:</i>		Component of Carestream DRX-Excel Plus System Includes PDU Switch Box				
<i>Mounting:</i>		Wall mounted using (4) – 1/4" Teks Screws w/ 1/4" THK x 1-1/4" O.D. Fender Washer to backing plate				
Dimensions [in]				Lowest Resonant Frequency [Hz]		
Width	Depth	Height	Weight [lb]	Front - Axis	Side - Axis	Vert - Axis
30.0	12.0	30.0	129	16.04	10.55	13.71
ICC-ES AC156 Shake Table Test Parameters						Code: 2019 CBC
S _{DS} [G]	z/h	I _p	A _{FLX-H} [G]	A _{RIG-H} [G]	A _{FLX-V} [G]	A _{RIG-V} [G]
2.0	1	1.5	3.20	2.40	1.68	0.68
2.5	0					
Unit satisfied AC156 requirements for structural integrity and manufacturer requirements for functionality after AC156 test.						



ATTACHMENT 2: TEST SPECIMEN SUMMARY


UUT-2001-3 480/240 Transformer for PDU						
<i>Manufacturer:</i>		Emerson				
<i>Identification:</i>		Part No.: HS5F5AS Serial No.: None				
<i>Description:</i>		Component of Carestream DRX-Excel Plus System				
<i>Mounting:</i>		Wall mounted using (4) – 1/4" Tek screws w/ 1/4" THK x 1-1/4" O.D. Fender Washer to backing plate				
Dimensions [in]				Lowest Resonant Frequency [Hz]		
Width	Depth	Height	Weight [lb]	Front - Axis	Side - Axis	Vert - Axis
10.0	9.1	16.9	115	18.36	10.61	2.92
ICC-ES AC156 Shake Table Test Parameters						Code: 2019 CBC
S _{DS} [G]	z/h	I _p	A _{FLX-H} [G]	A _{RIG-H} [G]	A _{FLX-V} [G]	A _{RIG-V} [G]
2.0	1	1.5	3.20	2.40	1.68	0.68
2.5	0					
Unit satisfied AC156 requirements for structural integrity and manufacturer requirements for functionality after AC156 test.						

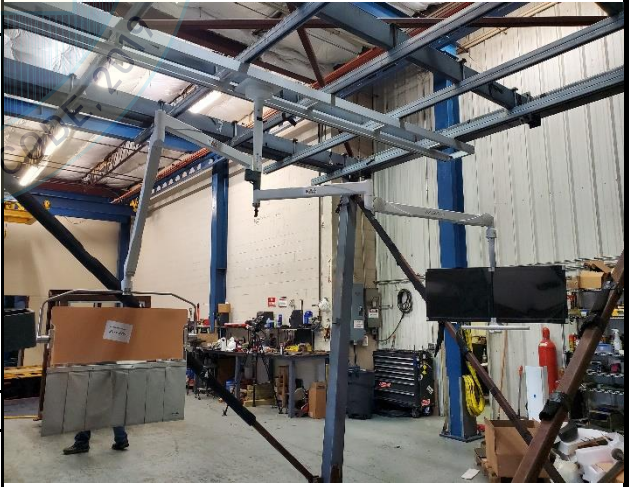


UUT-2001-4 Magnum 80 Generator						
<i>Manufacturer:</i>		CPI / Apelem				
<i>Identification:</i>		CPI Part No.: VZW2558FD812-22 (AS LABELED) Apelem Part No.: Z6F35769 (AS CONFIGURED) Serial No.: AMQ01867L19				
<i>Description:</i>		Component of Carestream DRX-Excel Plus System Requires the use of seismic kit P/N: AJ6928 which contains the external bracket.				
<i>Mounting:</i>		Rigid Base (Floor) mounted using (6) – 1/2" dia. SAE J429 Grade 5 Allen Head Cap Screws w/ Standard Washers through Carestream provided external bracket				
Dimensions [in]				Lowest Resonant Frequency [Hz]		
Width	Depth	Height	Weight [lb]	Front - Axis	Side - Axis	Vert - Axis
20.5	16.5	43.5	219	6.36	7.12	14.07
ICC-ES AC156 Shake Table Test Parameters						Code: 2019 CBC
S _{DS} [G]	z/h	I _p	A _{FLX-H} [G]	A _{RIG-H} [G]	A _{FLX-V} [G]	A _{RIG-V} [G]
2.0	1	1.5	3.20	2.40	1.68	0.68
2.5	0					
Unit satisfied AC156 requirements for structural integrity and manufacturer requirements for functionality after AC156 test.						



ATTACHMENT 2: TEST SPECIMEN SUMMARY

UUT-2001-5 Detector Cabinet							
Manufacturer: Apelem							
Identification: Part No.: Z5Z35156 Serial No.: Z5Z35156_138-01							
Description: Component of Carestream DRX-Excel Plus System Requires the use of seismic kit P/N: AJ6928 which contains the external bracket.							
Mounting: Rigid Base (Floor) mounted using (6) – 1/2" dia. SAE J429 Grade 5 Allen Head Cap Screws w/ Standard Washers through Carestream provided external bracket							
Dimensions [in]				Lowest Resonant Frequency [Hz]			
Width	Depth	Height	Weight [lb]	Front - Axis	Side - Axis	Vert - Axis	
22.0	24.7	32.0	237	13.88	6.29	14.15	
ICC-ES AC156 Shake Table Test Parameters							Code: 2019 CBC
S _{DS} [G]	z/h	I _p	A _{FLX-H} [G]	A _{RIg-H} [G]	A _{FLX-V} [G]	A _{RIg-V} [G]	
2.0	1	1.5	3.20	2.40	1.68	0.68	
2.5	0						
Unit satisfied AC156 requirements for structural integrity and manufacturer requirements for functionality after AC156 test.							


UUT-2001-6 Ceiling Suspension (w/ Dual Monitor & Lead Shield)							
Manufacturer: Mavig / WIDE Corporation							
Identification: Model No.: TS10U05 (Carriage Track) TST20U31-MA (Column / Carriage) GD42U20 (Dual Monitor Support) OT40B03 (Lead Shield) OT50U010 (Extension Springarm 1) OT60U030 (Extension Springarm 2) MX10P (Monitor 1 and 2) Serial No.: 1219/09024 (Carriage Track) 0120/11342 (Column / Carriage) 1219/00502 (Dual Monitor Support) 1119/20772 (Lead Shield) 0120/28906 (Extension Springarm 1) 0120/03073 (Extension Springarm 2) MX10SDQ9S0085 (Monitor 1) MX10SDQ9S0065 (Monitor 2)							
Description: Component of Carestream DRX-Excel Plus System							
Mounting: Ceiling mounted using (12) – 3/8" dia. Grade 5 bolts w/ Unistrut P1008 channel nuts through carriage track to Unistrut P1001 supports (2) bolts and nuts (Torque = 20 lb-ft) per Unistrut supports with 26" pitch							
Dimensions [in]				Lowest Resonant Frequency [Hz]			
Width	Depth	Height	Weight [lb]	Front - Axis	Side - Axis	Vert - Axis	
157.48	13.2	83.5	192	5.81	6.31	4.96	
ICC-ES AC156 Shake Table Test Parameters							Code: 2019 CBC
S _{DS} [G]	z/h	I _p	A _{FLX-H} [G]	A _{RIg-H} [G]	A _{FLX-V} [G]	A _{RIg-V} [G]	
2.0	1	1.5	3.20	2.40	1.68	0.68	
2.5	0						
Unit satisfied AC156 requirements for structural integrity and manufacturer requirements for functionality after AC156 test.							


UUT-2001-7 Control Console						
<i>Manufacturer:</i>		Apelem				
<i>Identification:</i>		Part No.: Z7E35094 Serial No.: Z7E35094_043-03				
<i>Description:</i>		Component of Carestream DRX-Excel Plus System Requires the use of seismic kit P/N: AJ6928 which contains the external bracket.				
<i>Mounting:</i>		<u>Countertop mounted</u> using (4) #10 Tekes screws through Carestream provided external bracket				
Dimensions [in]				Lowest Resonant Frequency [Hz]		
Width	Depth	Height	Weight [lb]	Front - Axis	Side - Axis	Vert - Axis
21.3	12.8	5.5	18.0	5.52	14.49	14.83
ICC-ES AC156 Shake Table Test Parameters						Code: 2019 CBC
S _{DS} [G]	z/h	I _p	A _{FLX-H} [G]	A _{RIG-H} [G]	A _{FLX-V} [G]	A _{RIG-V} [G]
2.0 2.5	1 0	1.5	3.20	2.40	1.68	0.68
Unit satisfied AC156 requirements for structural integrity and manufacturer requirements for functionality after AC156 test.						



UUT-2001-8 MPU Computer						
<i>Manufacturer:</i>		Thales				
<i>Identification:</i>		Part No.: 63105896 Serial No.: NHRM-02431				
<i>Description:</i>		Component of Carestream DRX-Excel Plus System Requires the use of seismic kit P/N: AJ6928 which contains the external bracket and strap.				
<i>Mounting:</i>		<u>Rigid Base (Floor) mounted</u> using (4) – 1/2" dia. SAE J429 Grade 5 Allen Head Cap Screws w/ Standard Washers though Carestream provided external bracket and strap				
Dimensions [in]				Lowest Resonant Frequency [Hz]		
Width	Depth	Height	Weight [lb]	Front - Axis	Side - Axis	Vert - Axis
8.3	22.9	18.3	44.5	30.77	45.43	> 50
ICC-ES AC156 Shake Table Test Parameters						Code: 2019 CBC
S _{DS} [G]	z/h	I _p	A _{FLX-H} [G]	A _{RIG-H} [G]	A _{FLX-V} [G]	A _{RIG-V} [G]
2.0 2.5	1 0	1.5	3.20	2.40	1.68	0.68
Unit satisfied AC156 requirements for structural integrity and manufacturer requirements for functionality after AC156 test.						



UUT-2001-9 Keyboard						
<i>Manufacturer:</i> Logitech						
<i>Identification:</i> Part No.: 820-007639 Serial No.: 1834MR11AF98						
<i>Description:</i> Component of Carestream DRX-Excel Plus System Requires the use of seismic kit P/N: AJ6928 which contains the external brackets.						
<i>Mounting:</i> <u>Countertop mounted</u> using (4) #10 Teks screws through Carestream provided external brackets						
Dimensions [in]			Lowest Resonant Frequency [Hz]			
Width	Depth	Height	Weight [lb]	Front - Axis	Side - Axis	Vert - Axis
17.75	6.25	0.90	1.0	> 50	16.20	12.83
ICC-ES AC156 Shake Table Test Parameters						Code: 2019 CBC
S _{DS} [G]	z/h	I _p	A _{FLX-H} [G]	A _{RIg-H} [G]	A _{FLX-V} [G]	A _{RIg-V} [G]
2.0 2.5	1 0	1.5	3.20	2.40	1.68	0.68
Unit satisfied AC156 requirements for structural integrity and manufacturer requirements for functionality after AC156 test.						

UUT-2001-10 19" LCD Monitor w/ Desk Mount						
<i>Manufacturer:</i> WIDE Corporation / Peerless						
<i>Identification:</i> Monitor Model No.: MX10P Mount Part No.: LCT100S Serial No.: MX10SDQ9S0052						
<i>Description:</i> Component of Carestream DRX-Excel Plus System						
<i>Mounting:</i> <u>Countertop mounted</u> using Peerless desk mount M10 thru bolt w/ nut and grommet						
Dimensions [in]			Lowest Resonant Frequency [Hz]			
Width	Depth	Height	Weight [lb]	Front - Axis	Side - Axis	Vert - Axis
17.25	6.25	14.25	10	16.84	10.49	10.78
ICC-ES AC156 Shake Table Test Parameters						Code: 2019 CBC
S _{DS} [G]	z/h	I _p	A _{FLX-H} [G]	A _{RIg-H} [G]	A _{FLX-V} [G]	A _{RIg-V} [G]
2.0 2.5	1 0	1.5	3.20	2.40	1.68	0.68
Unit satisfied AC156 requirements for structural integrity and manufacturer requirements for functionality after AC156 test.						

UUT-2001-11 23" LCD Monitor w/ Desk Mount							
<i>Manufacturer:</i>		EIZO / Peerless					
<i>Identification:</i>		Monitor Model No.: FlexScan EV2450 Mount Part No.: LCT100S Serial No.: 21723059					
<i>Description:</i>		Component of Carestream DRX-Excel Plus System					
<i>Mounting:</i>		Countertop mounted using Peerless desk mount M10 thru bolt w/ nut and grommet					
Dimensions [in]				Lowest Resonant Frequency [Hz]			
Width	Depth	Height	Weight [lb]	Front - Axis	Side - Axis	Vert - Axis	
21.25	6.75	12.5	7.5	17.52	12.98	12.86	
ICC-ES AC156 Shake Table Test Parameters							Code: 2019 CBC
S _{DS} [G]	z/h	I _p	A _{FLX-H} [G]	A _{RIG-H} [G]	A _{FLX-V} [G]	A _{RIG-V} [G]	
2.0 2.5	1 0	1.5	3.20	2.40	1.68	0.68	
Unit satisfied AC156 requirements for structural integrity and manufacturer requirements for functionality after AC156 test.							

