

OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT FACILITIES DEVELOPMENT DIVISION

OFFICE USE ONLY APPLICATION FOR OSHPD SPECIAL SEISMIC CERTIFICATION PREAPPROVAL (OSP) APPLICATION #: OSP-0423 OSHPD Special Seismic Certification Preapproval (OSP) Type: New Renewal **Manufacturer Information** Manufacturer: **GE** Healthcare Manufacturer's Technical Representative: Tom Farnow Mailing Address: 3000 N. Grandview Blvd., Waukesha, WI 53188-1696 Telephone: (888) 406-1101 Email: Tom.Farnow@gehcseismic.com **Product Information** Product Name: CT Systems Product Type: NA Product Model Number: Revolution Discovery CT System; Revolution Frontier CT System General Description: System components of multiple-component medical diagnostic imaging systems. Special Seismic Certification is limited to components of the Revolution Discovery CT System identified in Attachment 1. Mounting Description: Rigid, Floor Mounted Tested Seismic Enhancements: None **Applicant Information** Applicant Company Name: EASE Co. Contact Person: Jonathan Roberson Mailing Address: 5877 Pine Ave Suite 210, Chino Hills, CA 91709





Telephone: (909) 606-7622

Title: Principal Structural Engineer

Email: j.roberson@easeco.com



OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT FACILITIES DEVELOPMENT DIVISION

California Licensed Structural Eng	gineer Resp	onsible for the Engin	eering and Test Repo	ort(s)
Company Name: EASE	-			
Name: Jonathan Roberson		California Lice	nse Number: S4197	
Mailing Address: 5877 Pine Ave., Suite	210, Chino H	ills, CA 91709		
Telephone: (951) 295-1892	En	nail: jon@EASECo.com	1	
Certification Method				
GR-63-Core X ICC-E	S AC156	☐ IEEE 344	IEEE 693	NEBS 3
Other (Please Specify):				
		ORCODECO		
Testing Laboratory	JED	OM,	(A)	
Company Name: ENVIRONMENTAL T	E <mark>STING</mark> LABO	DRATORIES, INC. (ETL)	7	
Contact Person:	4		16	
Mailing Address: 11034 Indian Trail, Da	allas TX 75229	0SP-0423 0-3513		
Telephone: (972) 247-9657	BVE	nail: info@etldallas.com	n en	
	DAT	E: 07/30/2021		
	S.	+		

PORNIA BUILDING CODE?





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

STATE OF CALIFORNIA - HEALTH AND HUMAN SERVICES AGENCY



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Seismic Parameters	
Design Basis of Equipment or Components	(Fp/Wp) = See Attachment 1
SDS (Design spectral response accele	eration at short period, g) = See Attachment 1
a _P (Amplification factor) =	See Attachment 1
R _P (Response modification factor) =	See Attachment 1
Ω0 (System overstrength factor) =	2.0
I _P (Importance factor) =	1.5
z/h (Height ratio factor) =	1 and 0
Natural frequencies (Hz) =	See Attachment 2
Overall dimensions and weight =	See Attachment 1 0 0 c

OSHPD	Approval (For Office Use Only) - Approval Expires on December	per 31, 202	25
Date:	7/30/2021 OSP-0423	\m\	
Name:	Mohammad Karim	Title:	Supervisor, Health Facilities
Special S	Seismic Certification Valid Up to: Sps (g) = Mohammad Karim See Above Se	z/h =	See Above
Conditio	of Approval (if applicable):		





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ATTACHMENT 1: SEISMIC CERTIFIED COMPONENTS

ATTACHMENT PAGE | 1 OF 3

TABLE 1:

	MODEL	APPRO:	X. DIMENSI	ONS (IN.)	MAX. WT.								
COMPONENT	NUMBER	W	D	Н	(LB.)	MOUNT	BASIS [1]	F _P /W _P	S _{DS}	z/h	a _P	R _P	Ω_0
GANTRIES													
Revolution Discovery CT (CT HDe4) Gantry	5232083-100	89.3	40.5	75.6	R4095 D	Floor	UUT 12144101-1	2.40 1.13	2.0 2.5	1 0	1	1 ½	2
PATIENT TABLES				I E			D,						
GT1700V	5122080-11	25.6	93.3	19.2 / 41.2	1059 [2]	Floor	UUT 12112601-2						
GT1700 N9 ED3	5122080-4	25.6	93.3	19.2 / 41.2	1059	Floor	INT	0.40	2.0				ĺ
GT2000X	5380966	25.6	114.5	18.3 / 41.3	9288 04	2 Floor	INT	2.40 1.13	2.0 2.5	1 0	1	1 ½	2
GT2000 N9	5121647-3	25.6	114.5	19.2 / 41.3	1146	Floor	UUT 12140801-4						
GT2000 N9 ED3 Assy	5121647-4	25.6	114.5	18.3 / 41.3	h4146nac	Floor	SAME						
CONSOLES				WW.	7,000,000,000,000,000,000,000,000,000,0								
Console Assembly – GOC6.6	5212920-150	48.74	46.54 / 54.74	26.7/34.7	074050/2	02Floor	UUT 12131201-1	1.50 1.13	2.0 2.5	1.0 0.0	2 ½	6	2
NIO HD64 Console	5212920-186	18.5	29	25.8	163	Floor	UUT 12180501-3	1.44 1.13	2.0 2.5	1.0 0.0	1	2 ½	2
NIO HD64 Console	5212920-185	18.5	29	25.8	163	Floor	SAME	1.44 1.13	2.0 2.5	1.0 0.0	1	2 ½	2
POWER DISTRIBUTION (PDU)			PAIN		0	9						
PDU (NGPDU-61)	2326492-61	27.6	21.7	41.8	B(818 D)	NFloor	UUT 12131301-2	1.44 1.13	2.0 2.5	1 0	1	2 ½	2
Requires the Notes 1. BASIS: UUT SAM man INT testi 2. 1700V 3. GT 200	Base): free-stand use of brackets/n #: Indicates that a ME: Model is physi ufacturing location (Interpolated or Exing of other, simila Patient Table weight ponents listed about the sisted abou	nounting ass a test specin cally, mechan. xtrapolated) r models in ght does not eight does r	nen matchinanically & ela indicates a the product include the	g these characectrically the s model that waline. 350 lb. simulane 550 lb. simulane	sting unless cteristics was ame as test s as not specific ated patient lo	tested as periodic tested as periodic tested as periodic tested and present to load present to	part of this testi Difference is lim I, and by which t during testing ent during testing	ng prograr nited to mo seismic ce	n. del numbe	er, color, s	oftware a	nd/or GE	

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ATTACHMENT 1: SEISMIC CERTIFIED COMPONENTS

ATTACHMENT PAGE | 2 OF 3

TABLE 2:

Manufacturer GE HEALT System REVOLUTION	HCARE ON FRONTIER CT	SVSTEM											
	MODEL	APPRO	X. DIMENSIC		MAX. WT.		D 4 010 [1]	5 00/					
COMPONENT GANTRIES	NUMBER	W	D	Н	(LB.)	MOUNT	BASIS [1]	F _P /W _P	S _{DS}	z/h	a _P	R _P	Ω_0
Revolution Frontier Gantry (HDe6)	5232085-203	88.7	41.6	74.8	R 4061	Rigid Base	UUT 12180501-1	2.40 1.13	2.0 2.5	1 0	1	1 ½	2
Revolution Frontier Gantry (HDe6)	5232085-213	88.7	41.6	74.8	4061	Rigid Base	SAME	2.40 1.13	2.0 2.5	1 0	1	1 ½	2
Revolution Frontier Gantry (HDe6)	5232085-202	88.7	41.6	74.8	4061	Rigid Base	SAME	2.40 1.13	2.0 2.5	1 0	1	1 ½	2
PATIENT TABLES			Q-/)SP-04	-23	MM						
GT1700V	5122080-11	25.6	93.3	19.2 / 41.2	1059 [2]	Floor	UUT 12112601-2						
GT1700 N9 ED3	5122080-4	25.6	93.3	19.2 / 41.2	ha10591a	Floor	INT [3]	2.40	2.0	1	1	1 ½	2
GT2000X	5380966	25.6	114.5	18.3 / 41.3	1288	Floor	INT [3]	1.13	2.5	0			
GT2000 N9 ED3 Assy	5121647-4	25.6	114.5	18.3 / 41.3	_1146	Floor	SAME [3]						
CONSOLES			W	DAIE:	07/30/2	021							
Console Assembly (HDe6)	5940904-10	15.7	26.4	22.7	138	Rigid Base	UUT 12180501-2	1.44 1.13	2.0 2.5	1.0 0.0	1	2 ½	2
Console Assembly (HDe6)	5940904	15.7	26.4	22.7	138	Rigid Base	SAME	1.44 1.13	2.0 2.5	1.0 0.0	1	2 ½	2
Console Assembly	5940904-12	15.7	26.4	22.7/4	B 142.2	Rigid Base	UUT 1218181-1	1.44 1.13	2.0 2.5	1.0 0.0	1	2 ½	2
Console Assembly	5940904-13	15.7	26.4	22.7	142.2	Rigid Base	SAME	1.44 1.13	2.0 2.5	1.0 0.0	1	2 ½	2
Console Assembly	5940904-20	15.7	26.4	22.7	142.2	Rigid Base	SAME	1.44 1.13	2.0 2.5	1.0 0.0	1	2 ½	2
Console Assembly	5940904-23	15.7	26.4	22.7	142.2	Rigid Base	SAME	1.44 1.13	2.0 2.5	1.0 0.0	1	2 ½	2
POWER DISTRIBUTION	(PDU)		ı	ı			<u>l</u>		1	1	1	1	
PDU (NGPDU-61)	2326492-61	27.6	21.7	41.8	818	Floor	UUT 12131301-2	1.44 1.13	2.0 2.5	1 0	1	2 ½	2

Table continues next page.

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ATTACHMENT 1: SEISMIC CERTIFIED COMPONENTS

ATTACHMENT PAGE | 3 OF 3

TABLE 2:

Manufacturer	GE HEALTI	HCARE /												
System	REVOLUTION	ON FRONTIÉR C	T SYSTEM											
COMPONENT		MODEL NUMBER	APPRO W	X. DIMENSIO D	NS (IN.) H	MAX. WT.	MOUNT	BASIS [1]	F _P /W _P	S _{DS}	z/h	a _P	R _P	Ω_0
Mount		Base): free-stande use of brackets/							rting structu	ire and no	lateral su	pport abo	ve the bas	e.
Notes	• SAN mar e INT test 2. 1700V 3. See Ta	T#: Indicates that ME: Model is phys nufacturing locatic (Interpolated or Eing of other, similar Patient Table we	sically, mecha on. Extrapolated): ar models in the ight does not	nically & electrically & electrically & electrically a recorded the state of the st	model that we ne. 350 lb. simul	same as test s vas not specifi lated patient lo	specimen. D cally tested, pad present	oifference is ling and by which during testing	nited to mo	del numbe				ion of





leveling feet.

GE HEALTHCARE

ATTACHMENT 2: TEST SPECIMEN SUMMARY

ATTACHMENT PAGE | 1 OF 5

UUT 12144101-1	Revolution Discovery CT Gantry (CT HDe4
MANUFACTURER:	GE Healthcare
IDENTIFICATION:	Model No.: 5232083-100
_	Serial No.: STOENG037G
DESCRIPTION:	System component of Revolution Discovery CT System
MOUNTING:	Floor mounted using (4) - 5/8" dia GR 8 bolts through



PROPERTIES:			F01	K CODE C	24			
	DIMENSIONS (in.)	IE		TY WAY WAY	LOW	VEST RESONAI	NT FREQUEN	ICY (Hz.)
Width	Depth	Height		Weight (lb.)	Front-Axis	Side	-Axis	Vert-Axis
89.3	40.5	75.6	V	4095	5.0	7.	.1	15.7
SHAKE TABLE T	EST PARAMETERS	2/		SP-0423	1/2			
CODE	TEST CRITERIA	S _{DS}	z/h	IP	A _{FLX-H}	A _{RIG-H}	A_{FLX-V}	A_{RIG-V}
CBC 2016	ICC-ES AC156-15	2.0 2.5 BY	1 : Mol	nammad Kai	im ^{3.2}	2.4	1.68	0.68
Unit maintained s	tructural integrity and fu	nctionality afte	r the ICC	C-ES AC 156 test	THE			

UUT 12112601-2	GT1700V Ta <mark>b</mark> l	e VIII	AIE:	0//	00/2021				
MANUFACTURER:	GE Hangwei Medica	l Systems CC)., LTD					-	
IDENTIFICATION:	Model No.: 5122080	-11							
		00		4			3		1
DESCRIPTION:	System component of Test specimen include							Left	Front
MOUNTING:	Rigid Base (Floor) m bolts to interface pla		(4) - 5/	8" dia.	hex head				
PROPERTIES:									
	DIMENSIONS (in.)					LO\	NEST RESC	NANT FREQU	ENCY (Hz.)
Width	Depth	Height		W	eight (lb.)	Transverse-A	Axis Long	gitudinal-Axis	Vertical-Axis
25.6	93.3	19.2 / 41	.2	1059-	+ 350 Patient	3.9		15.2	14.2
SHAKE TABLE T	EST PARAMETERS								
CODE	TEST CRITERIA	S _{DS}	Z	/h	I _P	A _{FLX-H}	A _{RIG-H}	A _{FLX-V}	A_{RIG-V}
CBC 2016	ICC-ES AC156-15	2.0 2.6		.0	1.5	3.2	2.40	1.74	0.70

Unit maintained structural integrity and functionality after the ICC-ES AC 156 test



ATTACHMENT 2: TEST SPECIMEN SUMMARY

Unit maintained structural integrity and functionality after the ICC-ES AC 156 test

GOC6.6 Console

ATTACHMENT PAGE | 2 OF 5

UUT 12140801-4	GT2000 Patie	nt Table						
MANUFACTURER:	GE Hangwei Medica	al Systems CO.	LTD.				-	
IDENTIFICATION:	Model No.: 5121647	7-3			7	7.	The same	
					lin	Me William	7	-
DESCRIPTION:	System Component GT2000 N9 Patient Test specimen inclu Seismic Kit	Table						
MOUNTING:	Floor: (4) – 5/8" dia table foot assembly		SEHC s	supplied patient				
PROPERTIES:			F0	R CODE CO				
	DIMENSIONS (in.)	IED			MO, LOV	VEST RESONA	NT FREQUEN	ICY (Hz.)
Width	Depth	Height		Weight (lb.)	Front-Axis	Side	e-Axis	Vertical-Axis
25.6	114.5	19.2 / 41.3	3	1146+550 Patient	7.1	2	2.7	5.7
SHAKE TABLE TE	ST PARAMETERS	24/)SP_0423	11/5		•	
CODE	TEST CRITERIA	S _{DS}	z/	h I _P	A _{FLX-H}	A _{RIG-H}	A_{FLX-V}	A_{RIG-V}
CBC 2016	ICC-ES AC156-15	2.0 2.5 BY	1 Mo	hammad Kar	3.2	2.4	1.68	0.68

MANUFACTURER:	General Electric Con	npany				The same of	THE LAND	
IDENTIFICATION:	Model No.: 5212920-	-150			44		-	
		00					-	
DESCRIPTION:	System component of	of the Dis <mark>cove</mark>	ry CT750	HD System ULL DING	9	6		
MOUNTING:	Floor mounted using through GEHC suppl interface plate.	(4) – 3/8" dia. ied mounting	. socket he brackets to	ead bolts o aluminum				
						The state of the s	9	2007
PROPERTIES:							0	5000
PROPERTIES:	DIMENSIONS (in.)				LOW	EST RESONA	NT FREQUE	NCY (Hz.)
PROPERTIES: Width	DIMENSIONS (in.)	Height		Weight (lb.)	LOW Side -Axis		NT FREQUE!	NCY (Hz.) Vertical-Axis
	 	Height 26.7 / 34		Weight (lb.) 405		Fron	Ī	,
Width 48.74	Depth				Side -Axis	Fron	nt-Axis	Vertical-Axis
Width 48.74	Depth 46.54 / 54.74				Side -Axis	Fron	nt-Axis	Vertical-Axis
Width 48.74 SHAKE TABLE T	Depth 46.54 / 54.74 EST PARAMETERS	26.7 / 34	.7	405	Side -Axis 6.2	Fron	nt-Axis	Vertical-Axis 22.9

UUT 12131201-1



ATTACHMENT 2: TEST SPECIMEN SUMMARY

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 $A_{\text{FLX-V}}$

1.74

 A_{RIG-V}

0.70

UUT 12131301-2	Power Distr	ibution Unit				
MANUFACTURER:	GE Hangwei Med	lical Systems CO., LT	D	100000000000000000000000000000000000000		
IDENTIFICATION:	Model No.: 23264	192-61		- + VIII		E - 5
		/		114	00	
DESCRIPTION:	System compone	nt of the Optima CT58	30 System			
MOUNTING:		ing (4) – 3/8" dia. soci upplied mounting brack				
PROPERTIES:		(F	OR CODE CO	24.		
	DIMENSIONS (ir	1.)		LOWEST	RESONANT FREQU	JENCY (Hz.)
Width	Depth	Height	Weight (lb.)	Side-Axis	Front-Axis	Vertical-Axis
vviatn						

z/h

1.0

0.0

 I_P

1.5

A_{FLX-H}

3.2

 A_{RIG-H}

2.40

UUT 12180501-1 Revolution From	ntier Gantry (HDe6)
--------------------------------	---------------------

Unit maintained structural integrity and functionality after the ICC-ES AC 156 test

MANUFACTURER: GE Healthcare

CODE

CBC 2016

IDENTIFICATION: Model No.: 5232085-203

Serial No.: HDE6G - 002

TEST CRITERIA

ICC-ES AC156-15

DESCRIPTION: Component of the Revolution Frontier CT system.

Revolution Gantry (HDe6)

Configured with seismic options.

MOUNTING: Rigid Base (Floor) Mounted using

(4) – 5/8" diameter SAE J429 Grade 8 bolts to fixture plate.

 S_{DS}

2.0

2.6



DIMENSIONS (in.)			LOWEST	NCY (Hz.)		
Width	Depth	Height	Weight (lb.)	Longit -Axis	Transv-Axis	Vert-Axis
88.7	41.6	74.8	4061 GE Reported 4141 Measured	9.18	9.18	7.18
ICC-ES AC156 SHA	ICC-ES AC156 SHAKE TABLE TEST PARAMETERS CODE: 2016 C					
S _{DS} (G)	z/h	l _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	3.2	2.4	1.68	0.68
Unit satisfied AC156 requirements for structural integrity and manufacturer requirements for functionality after AC156 test.						



ATTACHMENT 2: TEST SPECIMEN SUMMARY

ATTACHMENT PAGE | 4 OF 5

UUT 12180501-2	Console Assembly (HDe6)						
MANUFACTURER:	GE Healthcare	,		A STATE OF THE STA		100	
IDENTIFICATION:	Model No.: 5940904 Serial No.: HDe60	7					
DESCRIPTION:	Component of the F Open style console HP Z840 Computer	Revolution Frontier CT	system.	30			
MOUNTING:	Console Anti Seism - (2) – M6 x 16 10.9 (P/N 2262896-30) - (2) – Flat washers	mounting assembly (3 ic Bracket (P/N 53571 Class bolts (Torque =	148-3) each w/ = 7.9 N-m)				
	DIMENSIONS (in	.)	OK CODE C	LOWEST	RESONANT FREQUE	ENCY (Hz.)	
Width	Depth	Height	Weight (lb.)	Side-Axis	Front-Axis	Vert-Axis	
15.7	26.4	22.7	138	14.46	30.24	35.92	
ICC-ES AC156 SHA	AKE TABLE TEST PA	RAMETERS		12		CODE: 2016 CBC	
S _{DS} (G)	z/h	IР	A _{FLX-H} (G)	A _{RIG-H} (G)	A _{FLX-V} (G)	A _{RIG-V} (G)	
2.0 2.5	1 0	1.5	3.2	2.4	1.68	0.68	
Unit satisfied AC156	requirements for stru	uctural integrity and m	anufacturer requirement	ts for functionality afte	r AC156 test.		

UUT 12180501-3	NIO HD64 Co	nsole DATE	07/30/2021			
MANUFACTURER:	GE Healthcare					
IDENTIFICATION:	Model No.: 5212920- Serial No.: HDe6BO_					
DESCRIPTION:	Component of the Re NIO style console	volution Discovery (CT system.		100	
MOUNTING:	Rigid Base (Floor) mc GE console to floor m Console Anti Seismic - (2) – M6 x 16 10.9 C (P/N 2262896-2) - (2) – Flat washers (F - (1) – 3/8" dia. ASTM washer.	ounting assembly (4 Bracket (P/N 53571 class bolts (Torque= P/N 2001-M8-02)	48) each w/ 7.9 N-m)			
	DIMENSIONS (in.)			LOWEST RESONANT FREQUENCY (Hz.)		
Width	Depth	Height	Weight (lb.)	Side-Axis	Front-Axis	Vert-Axis
18.5	29	25.8	162.5	14.77	18.32	18.5
ICC-ES AC156 SHA	AKE TABLE TEST PAR	AMETERS			CODE: 2016 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	3.2	2.4	1.68	0.68
Unit satisfied AC156	3 requirements for struc	ural integrity and m	anufacturer requirement	s for functionality after	er AC156 test.	



ATTACHMENT 2: TEST SPECIMEN SUMMARY

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UUT 1218181-1	Console Ass	sembly				
MANUFACTURER:	GE Healthcare	,		-	0-1-0	
IDENTIFICATION:	Model No.: 5940904-12 Serial No.: 460049CN1					
DESCRIPTION:		Revolution Frontier CT ounted in an open sty				
MOUNTING:	Console Anti Seism - (2) – M6 x 16 flang RoHS fastener (To - (2) – Flat washers	mounting assembly (3 nic Bracket (P/N 53571 ge screw, hexagon so orque=7.9 N-m) (P/N 2	148-3) each w/ cket, black oxide 2262896-30)			
	DIMENSIONS (in	.)		LOWEST	JENCY (Hz.)	
Width	Depth	Height	Weight (lb.)	Side-Axis	Front-Axis	Vert-Axis
15.7	26.4	22.7	142.2	15,12	34.41	48.65
ICC-ES AC156 SHAKE TABLE TEST PARAMETERS				CODE: 2016		
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	3.2	2.4	1.68	0.68
Unit satisfied AC156	requirements for str	uctural integrity and m	anufacturer requirement	ts for functionality after	AC156 test.	

DATE: 07/30/2021

CARRIA BUILDING CODE: 05