

DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION FACILITIES DEVELOPMENT DIVISION

APPLICATION FOR HCAI SPECIAL SEISMIC	OFFICE USE ONLY
CERTIFICATION PREAPPROVAL (OSP)	APPLICATION #: OSP-0775
HCAI Special Seismic Certification Preapproval (OSP)	
Type: X New Renewal	
Manufacturer Information	
Manufacturer: Shimadzu Medical Systems USA	
Manufacturer's Technical Representative: Akiharu Yamagata	
Mailing Address: 440 Wrangler Drive, Suite 300, Coppell, TX 75019	
Telephone: (310) 217-8855 Email: yamagata@sh	imadzu-usa.com
Product Information	MAD
Product Name: Fluoroscopy and Radiography Systems	
Product Type: NA	2
Product Model Number: FLOUROspeed X1	in .
General Description: Multiple component digital radiography and fluor	oscopy medical diagnostic imaging system.
Mounting Description: Rigid, See Certified Product Tables	
Tested Seismic Enhancements: None DATE: 10/13/2023	3
Applicant Information	- Ki
Applicant Company Name: WE Gundy & Associates, Inc	00
Contact Person: Travis Soppe	
Mailing Address: PO Box 9121, Boise, ID 83707	
Telephone: (208) 342-5989 Email: tsoppe@wega	i.com
Title: President	



STATE OF CALIFORNIA – HEALTH AND HUMAN SERVICES AGENCY

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OSP-0775

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DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION FACILITIES DEVELOPMENT DIVISION

California Licensed Structural Engineer Responsible for the Engineering and Test Report(s)
Company Name: W.E. GUNDY & ASOCIATES INC.
Name: Travis Soppe California License Number: S6115
Address: P.O. Box 9121, Boise, ID 83707
elephone: (208) 342-5989 Email: tsoppe@wegai.com
Certification Method
GR-63-Core X ICC-ES AC156 IEEE 344 IEEE 693 NEBS 3
Other (Please Specify):
FOR CODE CO
Testing Laboratory
Company Name: ENVIRONMENTAL TESTING LABORATORIES, INC. (ETL)
Contact Person: Jeremy Lange
Mailing Address: 11034 Indian Trail, Dallas TX 75229-3513
elephone: (972) 247-9657 Email: Jeremy@etIdallas.com
O DATE: 10/13/2023
PLIT
DATE: 10/13/2023



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OSP-0775



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Seismic Parameters

Design Basis of Equipment or Components	(Fp/Wp) = See Attachments		
SDS (Design spectral response accele	eration at short period, g) = $2.00 (z/h =$	1.0) and 2	2.50 (z/h = 0.0)
ap (Amplification factor) =	See attachments		
Rp (Response modification factor) =	See attachments		
Ω_0 (System overstrength factor) =	2.0		
lp (Importance factor) =	1.5		
z/h (Height ratio factor) =	1 and 0		
Natural frequencies (Hz) =	See Attachment		
Overall dimensions and weight =	See Attachment		
	JED FOR	*	
HCAI Approval (For Office Use Only) -	Approval Expires on 10/13/2029	E/	
Date: 10/13/2023	OSP-0775	G	
Name: Mohammad Karim		Title:	Supervisor, Health Facilities
Special Seismic Certification Valid Up to: Sc	os (g) = See Above	z/h =	See Above
Condition of Approval (if applicable):	DATE: 10/13/2023		
	PRIVIA BUILDING CODE	OV.	



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OSP-0775

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Table 1

SHIMADZU MEDICAL SYSTEMS SPECIAL SEISMIC CERTIFICATION CERTIFIED SYSTEM AND COMPONENTS



Manufacturer: Shimadzu Medical Systems

\mathbf{c} \mathbf{c} \mathbf{c}^{1}	Shimadzu	Din	nensions	(in)	Weight	Manutina	1111753
System Component ¹	Part Number	Width	Depth	Height	(lb)	Mounting	UUT ³
		R/F Pati	ent Table	:			
YSF-500	566-23001	76.0	92.5	96.0	3793	floor	UUT _z -1A
YSF-500	566-23001	76.0	92.5	96.0	3793 ²	floor	UUT _z -1B
		Wall	Stand				
BR-120	566-16500-42	26.4	14.4	85.3	338	floor/wall	UUT _z -6
	30.5	eiling Mo	unted Tu	be			
CH-200	563-61760-95	157.5	102.0	68.0	777	ceiling	UUT _z -2
	Mon	itor Ceili	ng Suspe	nsion	6		
IDI Quad Mount	1000F-4	38.0	80.0	68.0	370	ceiling	UUT _z -3
	O BY:	PC / User	Interfac	e and a second	0		
Atlas 2.0 PC	SM-9135AT	E:7.10/	1314.623	5.8	13	floor	UUT _z -4
DR-OPE	565-14276	6.0	18.5	22.6	47	floor	UUT _z -9

¹ All components are manufactured by Shimadzu Medical Systems. The part numbers listed uniquely identify the type of component, manufacturer, and material of construction for each sub-component within the tested units.

² Table weight listed does not include 400lb simulated patient weight.

³ The units were tested at different times and the subscripts on the UUT reference the following seismic test reports: y = SQ10-1205-01 z = 16963 Rev 2

SEISMIC CERTIFICATION LIMITS

System Component	Code	S _{DS} (g)	z / h	I _P	a _P	R _P	Ω ₀	$\mathbf{F}_{\mathbf{P}}$ / $\mathbf{W}_{\mathbf{P}}$
R/F Patient Table	CBC	2.0	1.0	1.50	1.0	1.5	2.0	2.40
K/F Fallent Table	2022	2.5	0	1.50	1.0	1.5	2.0	1.13
Wall Stand	CBC	2.0	1.0	1.50	1.0	1.5	2.0	2.40
wan Stand	2022	2.5	0	1.50	1.0	1.5	2.0	1.13
Ceiling Mounted Tube	CBC	2.0	1.0	1.50	2.5	2.5	2.0	3.60
Centing Wounted Tube	2022	2.5	0	1.50	2.5	2.5	2.0	1.50
Monitor Ceiling Suspension	CBC	2.0	1.0	1.50	2.5	2.5	2.0	3.60
women cennig suspension	2022	2.5	0	1.30	2.3	2.3	2.0	1.50
PC / User Interface	CBC	2.0	1.0	1.50	2.5	6.0	2.0	1.50
rC/Oser Interface	2022	2.5	0	1.30	2.5	0.0	2.0	1.13

Table 1

SHIMADZU MEDICAL SYSTEMS SPECIAL SEISMIC CERTIFICATION CERTIFIED SYSTEM AND COMPONENTS



Manufacturer: Shimadzu Medical Systems

System: FLUOROspeed X1	X-Ray and Fluoro	scopy Sys	tem				
System Component ¹	Shimadzu	Dimensions (in)			Weight	Mounting	UUT ³
System Component	Part Number	Width	Depth	Height	(lb)	wounting	UUI
	Co	ntrol / Po	wer Cabi	nets			
YSF Table Cabinet	565-14396	27.5	19.7	72.6	636	floor/wall	UUT _z -5
FSx1 D150BC-40S	562-29200-12	27.5	19.7	72.6	584	floor/wall	UUT _z -7
DR-300 Exam	565-14545	27.5	19.7	72.6	439	floor/wall	UUT _z -8
CH-200 / BR-120	503-04427D	15.8	19.7	20.1	110	floor	UUT _y -25

¹ All components are manufactured by Shimadzu Medical Systems. The part numbers listed uniquely identify the type of component, manufacturer, and material of construction for each sub-component within the tested units.

² Table weight listed does not include 400lb simulated patient weight included during the horizontal position tests.

³ The units were tested at different times and the subscripts on the UUT reference the following seismic test reports:

y = SQ10-1205-01	z = 16963 Rev 2	OSP-0775
		BY: Mohammad Karim
	C	DATE: 10/13/2023
	1	PRVIA BUILDING CODE
		TVIA BUILDING COV
		BUILDING

	S	EISMIC	CERTIF	FICATIO	N LIMIT	ſS		
System Component	Code	$S_{DS}\left(g ight)$	z / h	I _P	a _P	R _P	Ω ₀	$\mathbf{F}_{\mathbf{P}}$ / $\mathbf{W}_{\mathbf{P}}$
Control / Power Cabinets	CBC	2.0	1.0	1.50	2.5	6.0	2.0	1.50
Control / Fower Cabinets	2022	2.5	0	1.30	2.3	0.0	2.0	1.13

UUTz-1A

UNIT UNDER TEST (UUT) SUMMARY SHEET



Mounting Details: Rigid floor mounted with (6) 5/8" grade 5 bolts

	: Shimadzu Me	tion Sustain			Deation: ET			
	YSF-500 R/F Ta			A MARKED AND A	ate: April 20		(X)	
Model Numbe			BOILE	$HV \sim$	Number:		2	
UUT Function	1: Patient table v	vith integrate	ed R/F sys	_				
UUT Descript	Componen	t of the FLU etector: Viev	OROspeed	1 X1sys RD-3643	tem. Includes 3 VAW			2
	Din	nensions (inc				atural Free	uency (Hz)	
Weight (lb)	Width	Depth	Hei	ght	FB	SS		V
3,793	76.0	92.5	96	0	4.7	7.0		5.0
	· · · · · · · · · · · · · · · · · · ·	SEISM	IC TEST	PARA	METERS			
Building Code	e / Test Criteria	$S_{DS}(g)$	z / h	IP	A _{FLX-H} (g)	$A_{RIG-H}(g)$	A _{FLX-V} (g)	$A_{RIG-V}(g)$
CBC 2022 / I	CC-ES AC156	2.00 2.50	1.0	1.5 1.5	3.20	2.40	- 1.67	- 0.67
	as full of contents du tural integrity during	iring testing an	d remained	functiona	l before and aft	er the ICC-ES		



Mounting Details: Rigid floor mounted with (6) 5/8" grade 5 bolts

Mounting Det	ails: Rigid floor	mounted wit	h (6) 5/8"	grade 5	bolts			
			A CO	0775				
Manufacturer	: Shimadzu Me	dical Systems		Test Lo	cation: ET	L (Dallas, T	TX)	
Component:	YSF-500 R/F Ta	ble		Test Da	te: April 20	23		
Model Numbe	er: 566-23001	VIA		Report	Number: 1	16963 Rev 2	2	
UUT Function	: Patient table v	-	-			-		
UUT Descript	10n• +	t of the FLUC etector: Cano	-		em. Include	s seismic ki	t SMK-114	-2
		U	UT PRO	PERTI	ES			
Weight (lb)		nensions (incl				latural Freq		
with Patient	Width	Depth	Heig	-	FB	SS		V
4,193	76.0	92.5	96		4.7	5.0		5.3
	op moves laterally an ing position with a to					procedures. T	The system wa	as tested in
		SEISMI	C TEST	PARAN	METERS			
Building Code	e / Test Criteria	S _{DS} (g)	z / h	IP	$A_{FLX-H}(g)$	$A_{RIG-H}(g)$	A _{FLX-V} (g)	$A_{RIG-V}(g)$
CBC 2022 / I	CC-ES AC156	2.00	1.0	1.5	3.20	2.40	-	-
	CC-L5 AC150	2.50	0	1.5	-	-	1.67	0.67
	as full of contents du ural integrity during				before and aft	er the ICC-ES	S AC156 test.	The unit





UUT_z-4

UNIT UNDER TEST (UUT) SUMMARY SHEET



Mounting Details: Rigid floor mounted with (4) #8 screws



10/13/2023



Mounting Details: Combined rigid wall mounted with (2) 1/4" diameter bolts and rigid floor mounted with (4) 1/2" diameter bolts.



Waight (1h)	Dir	nensions (in	ches)		Ν	latural Freq	uency (Hz)	
Weight (lb)	Width	Depth	epth Height		FB	SS	5	V
636	27.5	19.7	72	.6	N/A	N/.	A	N/A
		SEISM	IIC TEST	PARAN	IETERS			
Building Code	e / Test Criteria	$S_{DS}(g)$	z / h	Ip	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	$A_{RIG-V}(g)$
CDC 2022 / I	CC-ES AC156	2.00	1.0	1.5	3.20	2.40	-	-
CBC 2022 / 1	CC-ES ACIJO	2.50	0	1.5	-	-	1.67	0.67
Note: The unit w	as full of contents d	uring testing a	nd remained	functional	before and aft	er the ICC-ES	SAC156 test.	The unit

maintained structural integrity during and after the ICC-ES AC156 test.

UUTz-6



Mounting Details: Combined rigid wall mounted with (2) 1/4" diameter bolts and rigid floor mounted with (4) 3/8" diameter bolts.

	O Kr							
Manufacturer	: Shimadzu Me	edical Systems	5	Test Lo	ocation: ET	L (Dallas, T	ГХ)	
	:: Shimadzu Me BR-120 Wall Sta		RHTTE	F HATA	ocation: ETI ate: April 20		ГХ)	
Component:		and – Non-tilt	RHTTE	Test Da		23		
Component: Model Numbe	BR-120 Wall Sta	and – Non-tilt 2	ing/ILC	Test Da Report	ate: April 20 Number: 1	23		
Component: Model Numbe	BR-120 Wall Sta er: 566-16500-4 i: Radiographic ion: ^{Componen}	and – Non-tilt 2	r X-ray e DROspee	Test Da Report xposures d X1sys	ate: April 20 Number: 1 s tem. Includes	23 16963 Rev 1	2	59
Component: Model Numbe UUT Functior	BR-120 Wall Sta er: 566-16500-4 i: Radiographic ion: ^{Componen}	and – Non-tilt 2 wall stand for t of the FLUC etector: View	r X-ray e DROspee	Test Da Report xposures d X1sys RD-4343	ate: April 20 Number: 1 s tem. Includes 3 VAW	23 16963 Rev 1	2	59
Component: Model Numbe UUT Function UUT Descript	BR-120 Wall Sta er: 566-16500-4 i: Radiographic ion: Componen Installed D	and – Non-tilt 2 wall stand for t of the FLUC etector: View	r X-ray e DROspee orks FXI UT PRO	Test Da Report xposures d X1sys RD-4343	ate: April 20 Number: 1 s tem. Includes 3 VAW ES	23 16963 Rev 3 s seismic ki	2	
Component: Model Numbe UUT Function UUT Descript Weight (lb)	BR-120 Wall Sta er: 566-16500-4 i: Radiographic ion: Componen Installed D Din Width	and – Non-tilt 2 wall stand fo t of the FLUC etector: View U nensions (incl Depth	r X-ray e DROspee orks FXI UT PRO hes) Hei	Test Da Report xposures d X1sys RD-4343 PERTI ght	ate: April 20 Number: 1 s tem. Includes 3 VAW ES N FB	23 16963 Rev s seismic ki latural Freq SS	2 it SMK-105 juency (Hz) S) V
Component: Model Numbe UUT Function UUT Descript	BR-120 Wall Sta er: 566-16500-4 i: Radiographic ion: Componen Installed D Din	and – Non-tilt 2 wall stand fo t of the FLUC etector: View U nensions (incl	r X-ray e DROspee orks FXI UT PRO hes) Hei	Test Da Report xposures d X1sys RD-4343 PERTI	ate: April 20 Number: 1 s tem. Includes 3 VAW ES N	23 16963 Rev s seismic ki latural Freq	2 it SMK-105 juency (Hz) S)
Component: Model Numbe UUT Function UUT Descript Weight (lb)	BR-120 Wall Sta er: 566-16500-4 i: Radiographic ion: Componen Installed D Din Width	and – Non-tilt 2 wall stand for t of the FLUC etector: View U nensions (incl Depth 14.4	r X-ray e DROspee Porks FXI UT PRO hes) Hei 85	Test Da Report xposures d X1sys RD-4343 PERTI ght 5.3	ate: April 20 Number: 1 s tem. Includes 3 VAW ES N FB	23 16963 Rev s seismic ki latural Freq SS	2 it SMK-105 juency (Hz) S) V
Component: Model Number UUT Function UUT Descript Weight (lb) 338	BR-120 Wall Sta er: 566-16500-4 i: Radiographic ion: Componen Installed D Din Width	and – Non-tilt 2 wall stand for t of the FLUC etector: View U nensions (incl Depth 14.4	r X-ray e DROspee Porks FXI UT PRO hes) Hei 85	Test Da Report xposures d X1sys RD-4343 PERTI ght 5.3	ate: April 20 Number: 1 s tem. Includes 3 VAW ES NA FB N/A	23 16963 Rev s seismic ki latural Freq SS	2 it SMK-105 juency (Hz) S A) V N/A
Component: Model Number UUT Function UUT Descript Weight (lb) 338 Building Cod	BR-120 Wall Sta er: 566-16500-4 i: Radiographic ion: Componen Installed D Dir Width 26.4	and – Non-tilt 2 wall stand for t of the FLUC etector: View U nensions (incl Depth 14.4 SEISMI	r X-ray e DROspee orks FXI UT PRO hes) Hei 85 C TEST	Test Da Report xposures d X1sys RD-4343 PERTI ght 5.3 PARAN	ate: April 20 Number: 1 s tem. Includes 3 VAW ES NA FB N/A METERS	23 16963 Rev 1 s seismic ki atural Freq SS N/	2 it SMK-105 juency (Hz) S A) V N/A

UUT_z-7



Mounting Details: Combined rigid wall mounted with (2) 1/4" diameter bolts and rigid floor mounted with (4) 1/2" diameter bolts.



Note: The unit was full of contents during testing and remained functional before and after the ICC-ES AC156 test. The unit maintained structural integrity during and after the ICC-ES AC156 test.



Note: The unit was full of contents during testing and remained functional before and after the ICC-ES AC156 test. The unit maintained structural integrity during and after the ICC-ES AC156 test.

UUT_z-9

UNIT UNDER TEST (UUT) SUMMARY SHEET



Mounting Details: Rigid floor mounted with (4) 3/8" lag bolts.

BY: Monamine arim DATE: 1077200											
Manufacturer: Shimadzu Medical Systems					Test Location: ETL (Dallas, TX)						
Component: DR-OPE Model Number: 565-14276					Test Date: April 2023 Report Number: 16963 Rev 2						
		DC			Report	ivuinder:	10903 Kev	2			
	: Imaging syste				1 37 1						
UUT Descript	ion: Componen										
		τ	JU	T PRO	PERTI	ES					
Weight (lb)		nensions (inc	che			Natural Freq					
	Width	Depth		Hei		FB	SS			V	
47	6.0	18.5		22		30.7	14	.2		29.7	
		SEISM	Ι	C TEST	PARA	METERS					
Building Code	e / Test Criteria	S _{DS} (g)		z / h	Ip	A _{FLX-H} (g)	A _{RIG-H} (g)	AFLX-V	/ (g)	$A_{RIG-V}(g)$	
				1.0	1.5	3.20	2.40	-		-	
CBC 2022 / ICC-ES AC156		2.50	0		1.5	-	-	1.6	1.67 0		
Note: The unit w maintained struct	as full of contents d ural integrity during	uring testing an g and after the I	nd 1 [CC	remained C-ES AC1	functiona 56 test.	l before and aft	ter the ICC-E	S AC156	o test.	The unit	





Mounting Details: Rigid floor mounted with 2 - 11 gauge bent steel plates (12" x 2") on both sides of the UUT anchored to the floor with (4) ¹/₄" diameter bolts and connected to the UUT with 2" wide industrial Velcro tape at the top of the 12" leg.

2 while middstriar verero tape at the top of the 12 reg.											
DATE: 10/13/2023											
Manufacturer: Shimadzu Medical Systems Test Location: ETL (Dallas, TX)											
Component:	ate: October	2012									
Model Numbe	r: 503-04427D		UILL	Report	Number: S	SQ10-1205	-01				
UUT Function	: Control cabin	et for radiogra	phy syst	em							
UUT Descript	ion: Componen	t of the FLUO	ROspee	d X1sys	tem						
		UI	U T PRO	PERTI	ES						
	Dir	nensions (inch	es)	Natural Frequency (Hz)							
Weight (lb)	Width	Depth	Hei	ght	FB		SS		V		
110	19.7	15.8	20).1	18.8	1.4	1.4		>33.0		
		SEISMIC	C TEST	PARA	METERS						
Building Code	e / Test Criteria	$S_{DS}(g)$	z / h	Ip	A _{FLX-H} (g)	$A_{RIG-H}(g)$	A _{FLX-V}	- (g)	$A_{RIG-V}(g)$		
CBC 2022 / ICC-ES AC156 2.60 2.60		2.00	1.0	1.5	3.20	2.40					
		2.60	0.0	1.5			1.74		0.70		
	as full of contents d ural integrity during				l before and aft	er the ICC-ES	S AC156	test.	The unit		