



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

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

OFFICE USE ONLY

APPLICATION #: OSP-0702

OSHPD Special Seismic Certification Preapproval (OSP)

Type: New Renewal

Manufacturer Information

Manufacturer: Philips Medical Systems DMC GmbH

Manufacturer's Technical Representative: Ming Xiao

Mailing Address: Roentgenstrasse 24, Hamburg, Ha 22335

Telephone: (94034) 971-2306

Email: Ming.Xiao@Philips.com

Product Information

Product Name: Fluoroscopy and Radiography Systems

Product Type: NA

Product Model Number: CombiDiagnost R90

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

Mounting Description: Rigid, 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: WE Gundy & Associates, Inc

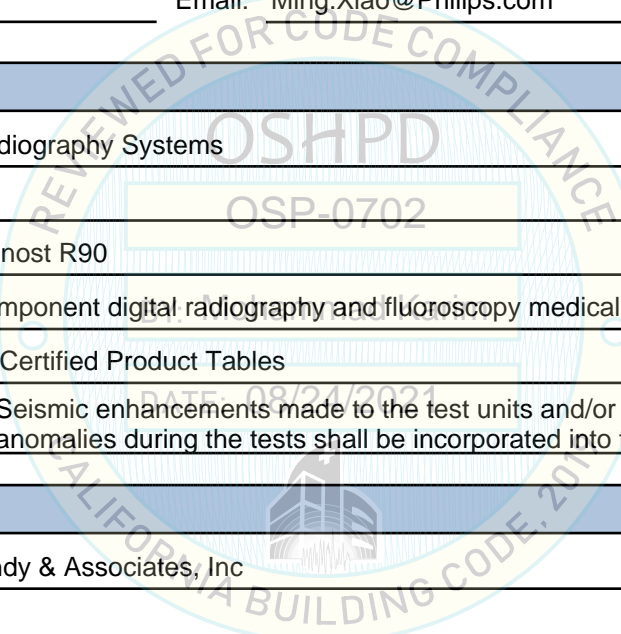
Contact Person: Travis Soppe

Mailing Address: PO Box 9121, Boise, ID 83707

Telephone: (208) 342-5989

Email: tsoppe@wegai.com

Title: President





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

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

Company Name: W.E. GUNDY & ASSOCIATES INC.

Name: Travis Soppe

California License Number: S6115

Mailing Address: P.O. Box 9121, Boise, ID 83707

Telephone: (208) 342-5989

Email: tsoppe@wegai.com

Certification Method

GR-63-Core

ICC-ES AC156

IEEE 344

IEEE 693

NEBS 3

Other (Please Specify): _____

Testing Laboratory

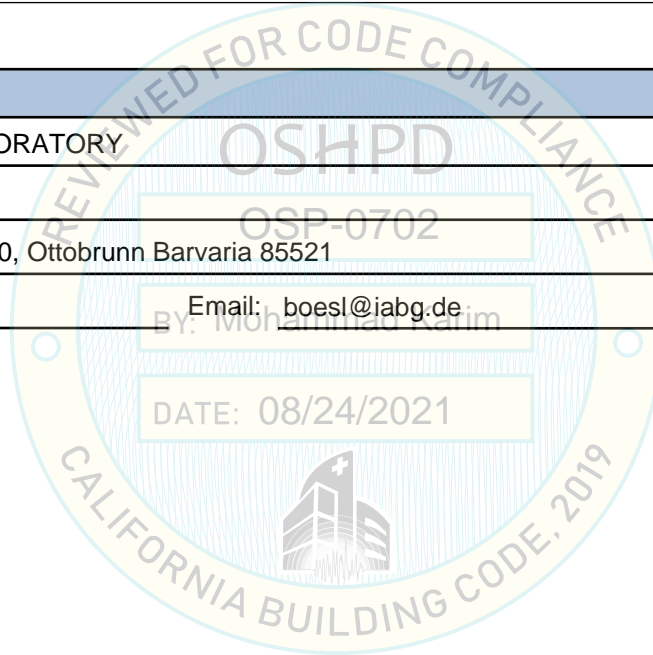
Company Name: IABG TEST LABORATORY

Contact Person: Florian Bösl

Mailing Address: Einsteinstrasse 20, Ottobrunn Barvaria 85521

Telephone: (4034) 971-1821

Email: boesl@iabg.de





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Seismic Parameters

Design Basis of Equipment or Components (F_p/W_p) =	See Attachments
SDS (Design spectral response acceleration at short period, g) =	2.0 at $z/h = 1.0$ and 2.5 at $z/h = 0$
a_p (Amplification factor) =	See attachments
R_p (Response modification factor) =	See attachments
Ω_0 (System overstrength factor) =	See Attachment
I_p (Importance factor) =	1.5
z/h (Height ratio factor) =	1 and 0
Natural frequencies (Hz) =	See Attachment
Overall dimensions and weight =	See Attachment

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

Date:	8/24/2021		
Name:	Mohammad Karim	Title:	Supervisor, Health Facilities
Special Seismic Certification Valid Up to: SDS (g) =	See Above	z/h =	See Above
Condition of Approval (if applicable):	DATE: 08/24/2021		

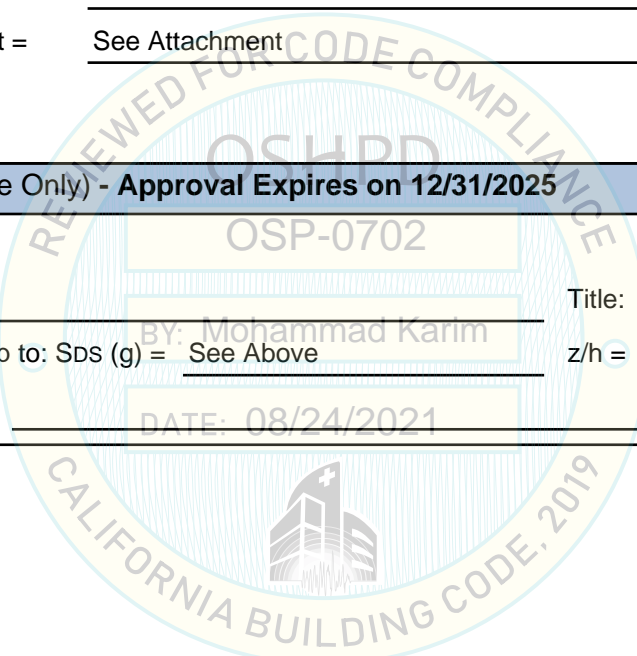



Table 1	PHILIPS MEDICAL SYSTEMS DMC GmbH SPECIAL SEISMIC CERTIFICATION CERTIFIED SYSTEM AND COMPONENTS					 WEGAI <small>W.E. GUNDY & ASSOCIATES, INC. STRUCTURAL & EARTHQUAKE ENGINEERING</small>			
	System: CombiDiagnost R90					Manufacturer: Philips Medical Systems DMC GmbH			

System Component ¹	Philips Part Number	Dimensions (in)			Weight (lb)	Mounting	UUT
		Width	Depth	Height			

Geometry Stand							
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CombiDiagnost R90 1.1	9890-010-70151	93.9	80.4	109.2	2976 ²	floor	UUT-6A
CombiDiagnost R90 1.1	9890-010-70151	153.3	80.4	140.7	2976	floor	UUT-6B

Generator Cabinets							
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M-Cabinet RF	4512-202-03621	21.7	20.5	77.0	420	floor/wall	UUT-11
Generator Cabinet GCF	9890-000-70307	21.7	20.5	77.0	745	floor/wall	UUT-12
Geometry Cabinet	4512-202-03591	21.7	20.5	77.0	485	floor/wall	UUT-13

Touch Screen Console and M-Shield							
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Geo Touch Screen Console CombiDiagnost	4512-134-69652	14.0	14.0	4.3	12	floor	UUT-10
M-Shield (AXIOMTEC)	4512-133-65532	9.1	6.0	1.8	1	wall	UUT-3

Notes:

¹ All components are manufactured by Philips Medical Systems DMC GmbH unless noted in (). The part numbers listed uniquely identify the type of component, manufacturer, and material of construction for each sub-component within the tested units.

² Geometry stand weight does not include simulated patient weight used for test on UUT-6A. See UUT summary sheet for simulated patient weight.

SEISMIC CERTIFICATION LIMITS								
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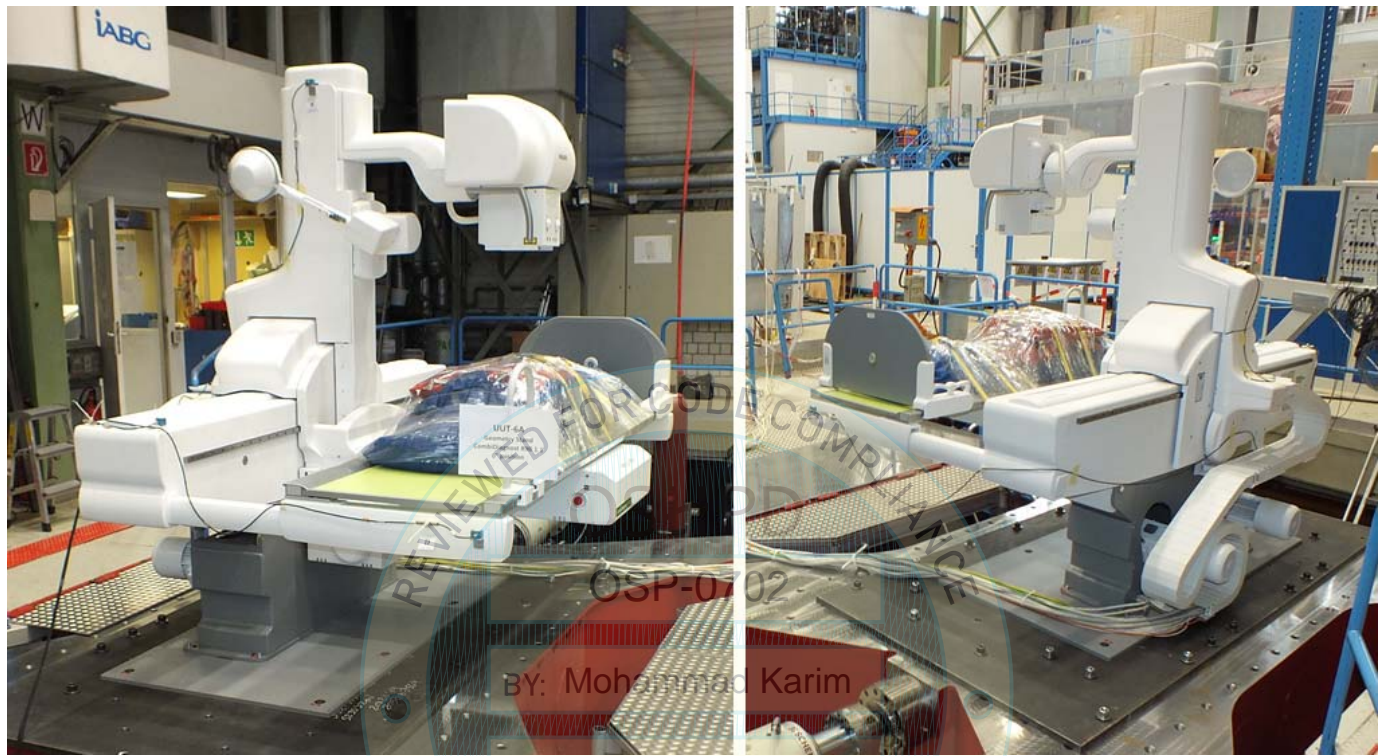
System Component	Code	S _{DS} (g)	z / h	I _P	a _P	R _P	Ω ₀	F _P / W _P
Geometry Stand	CBC 2019	2.0	1.0	1.50	1.0	1.5	1.5	2.40
		2.5	0					1.13
Generator Cabinets	CBC 2019	2.0	1.0	1.50	2.5	6.0	2.0	1.50
		2.5	0					1.13
Geo Touch Screen Console	CBC 2019	2.0	1.0	1.50	1.0	2.5	2.0	1.44
		2.5	0					1.13
M-Shield	CBC 2019	2.0	1.0	1.50	1.0	2.5	2.0	1.44
		2.5	0					1.13

UUT-6A

**UNIT UNDER TEST (UUT)
SUMMARY SHEET**



Mounting Details: Floor mount with 8 – ¾ inch grade 8 bolts with washers.



Manufacturer: Philips Medical Systems DMC GmbH | **Test Location:** IABG mbH, Germany

Component: CombiDiagnost R90 Geometry Stand | **Test Date:** September 2020

Model Number: 9890-010-70151 | **Report Number:** TAB3-PB-20-128-V0

UUT Function: Radiography and Fluoroscopy imaging system

UUT Description: CombiDiagnost R90 Geometry Stand in horizontal normal operating position.

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
2976	93.9	80.4	109.2	3.2	3.7	3.5

The patient table moves laterally both ways and vertically to accommodate different patients and procedures. The system was tested in the normal operating position with the table horizontally centered, a table top height of 32.9", and a total simulated patient weight of 500lbs.

SEISMIC TEST PARAMETERS

Building Code / Test Criteria	SDS (g)	z / h	Ip	AFLX-H (g)	ARIG-H (g)	AFLX-V (g)	ARIG-V (g)
CBC 2019 / ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	--	--
	2.50	0.0	1.5	--	--	1.67	0.67

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-6B

**UNIT UNDER TEST (UUT)
SUMMARY SHEET**



Mounting Details: Floor mount with 8 – ¾ inch grade 8 bolts with washers.



Manufacturer: Philips Medical Systems DMC GmbH	Test Location: IABG mbH, Germany
Component: CombiDiagnost R90 Geometry Stand	Test Date: March 2021
Model Number: 9890-010-70151	Report Number: TAB3-PB-20-128-V0
UUT Function: Radiography and Fluoroscopy imaging system	
UUT Description: CombiDiagnost R90 Geometry Stand in vertical normal operating position.	

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
2976	153.3	80.4	140.7	3.1	3.8	3.1

The patient table moves laterally both ways and vertically to accommodate different patients and procedures. The system was tested in the normal vertical operating position with the table horizontally centered and rotated 90°.

SEISMIC TEST PARAMETERS

Building Code / Test Criteria	SDS (g)	z / h	Ip	AFLX-H (g)	ARIG-H (g)	AFLX-V (g)	ARIG-V (g)
CBC 2019 / ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	--	--
	2.50	0.0	1.5	--	--	1.67	0.67

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-10**UNIT UNDER TEST (UUT)
SUMMARY SHEET****Mounting Details:** Floor mount with 3 – M5 grade 8 bolts.**Manufacturer:** Philips Medical Systems DMC GmbH **Test Location:** IABG mbH, Germany**Component:** Geo Touch Screen Console**Test Date:** September 2020**Model Number:** 4512-134-69652**Report Number:** TAB3-PB-20-128-V0**UUT Function:** Operation for CombiDiagnost Radiography and Fluoroscopy imaging system**UUT Description:** Base mounted touch screen console**UUT PROPERTIES**

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
12	14.0	14.0	4.3	> 33	> 33	> 33

SEISMIC TEST PARAMETERS

Building Code / Test Criteria	SDS (g)	z / h	I _p	AFLX-H (g)	ARIG-H (g)	AFLX-V (g)	ARIG-V (g)
CBC 2019 / ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	--	--
	2.50	0.0	1.5	--	--	1.67	0.67

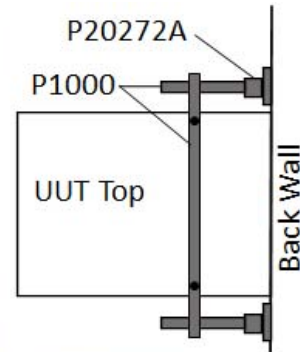
Note: The unit was full of contents during testing and remained functional before and after the ICC-ES AC156 test. The unit maintained structural integrity during and after the ICC-ES AC156 test.

UUT-11

**UNIT UNDER TEST (UUT)
SUMMARY SHEET**



Mounting Details: Combined floor, wall, top restraint. Floor restrained in the front with 2 – 3/8" grade 8 bolts / washers, wall restrained in the rear with 4 – 1/4" grade 8 bolts / washers, and top restrained with 2 – M8 grade 8 bolts to a Unistrut top support (see detail below).



Manufacturer: Philips Medical Systems DMC GmbH	Test Location: IABG mbH, Germany
Component: M-Cabinet RF	Test Date: September 2020
Model Number: 4512-202-03621	Report Number: TAB3-PB-20-128-V0
UUT Function: Generator for CombiDiagnost Radiography and Fluoroscopy imaging system	
UUT Description: Component of CombiDiagnost system	

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
420	21.7	20.5	77.0	NA	NA	NA

SEISMIC TEST PARAMETERS

Building Code / Test Criteria	SDS (g)	z / h	I _p	A _F FLX-H (g)	A _R IG-H (g)	A _F FLX-V (g)	A _R IG-V (g)
CBC 2019 / ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	--	--
	2.50	0.0	1.5	--	--	1.67	0.67

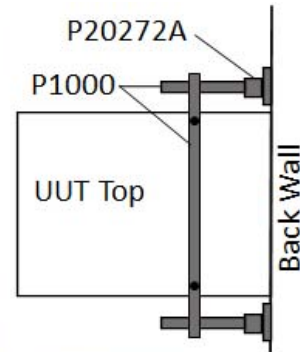
Note: The unit was full of contents during testing and remained functional before and after the ICC-ES AC156 test. The unit maintained structural integrity during and after the ICC-ES AC156 test.

UUT-12

**UNIT UNDER TEST (UUT)
SUMMARY SHEET**



Mounting Details: Combined floor, wall, top restraint. Floor restrained in the front with 2 – 3/8" grade 8 bolts / washers, wall restrained in the rear with 4 – 1/4" grade 8 bolts / washers, and top restrained with 2 – M8 grade 8 bolts to a Unistrut top support (see detail below).



REVIEWED FOR CODE COMPLIANCE
OSHPD
OSP-0702
BY: Mohammad Karim
UUT-12
DATE: 08/24/2021

Manufacturer: Philips Medical Systems DMC GmbH	Test Location: IABG mbH, Germany
Component: Generator Cabinet GCF	Test Date: September 2020
Model Number: 9890-000-70307	Report Number: TAB3-PB-20-128-V0
UUT Function: Generator for CombiDiagnost Radiography and Fluoroscopy imaging system	
UUT Description: Component of CombiDiagnost system	

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
745	21.7	20.5	77.0	NA	NA	NA

SEISMIC TEST PARAMETERS

Building Code / Test Criteria	SDS (g)	z / h	I _p	AFLX-H (g)	ARIG-H (g)	AFLX-V (g)	ARIG-V (g)
CBC 2019 / ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	--	--
	2.50	0.0	1.5	--	--	1.67	0.67

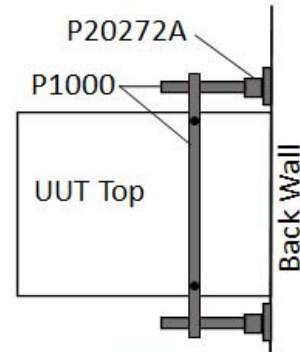
Note: The unit was full of contents during testing and remained functional before and after the ICC-ES AC156 test. The unit maintained structural integrity during and after the ICC-ES AC156 test.

UUT-13

**UNIT UNDER TEST (UUT)
SUMMARY SHEET**



Mounting Details: Combined floor, wall, top restraint. Floor restrained in the front with 2 – 3/8" grade 8 bolts / washers, wall restrained in the rear with 4 – 1/4" grade 8 bolts / washers, and top restrained with 2 – M8 grade 8 bolts to a Unistrut top support (see detail below).



Manufacturer: Philips Medical Systems DMC GmbH	Test Location: IABG mbH, Germany
Component: Geometry Cabinet	Test Date: September 2020
Model Number: 4512-202-03591	Report Number: TAB3-PB-20-128-V0
UUT Function: Generator for CombiDiagnost Radiography and Fluoroscopy imaging system	
UUT Description: Component of CombiDiagnost system	

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
485	21.7	20.5	77.0	NA	NA	NA

SEISMIC TEST PARAMETERS

Building Code / Test Criteria	SDS (g)	z / h	I _p	AFLX-H (g)	ARIG-H (g)	AFLX-V (g)	ARIG-V (g)
CBC 2019 / ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	--	--
	2.50	0.0	1.5	--	--	1.67	0.67

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-3

**UNIT UNDER TEST (UUT)
SUMMARY SHEET**



Mounting Details: Wall mounted with 4 – M3 grade 5 screws.



Manufacturer: AXIOMTEC

Test Location: IABG mbH, Germany

Component: M-Shield

Test Date: March 2021

Model Number: 4512-133-65532

Report Number: TAB3-PB-20-128-V0

UUT Function: Firewall hardware

UUT Description: Component of Philips Radiography and Fluoroscopy imaging systems

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
1	9.1	6.0	1.8	NA	NA	NA

SEISMIC TEST PARAMETERS

Building Code / Test Criteria	SDS (g)	z / h	I _p	AFLX-H (g)	ARIG-H (g)	AFLX-V (g)	ARIG-V (g)
CBC 2019 / ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	--	--
	2.50	0.0	1.5	--	--	1.67	0.67

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.