APPLICATION FOR HCAI SPECIAL SEISMIC CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY

APPLICATION #: OSP-0026

HCAI Special Seismic Certification Preapproval (OSP)

Type: ☐ New ☒ Renewal

Manufacturer Information

Manufacturer: Carrier Corporation

Manufacturer's Technical Representative: Joseph Clark

Mailing Address: 9701 Old Statesville Road, Charlotte, NC 28269

Telephone: (704) 921-3800 Email: joseph.clark@carrier.com

Product Information

Product Name: 19XR and 19XRV Centrifugal Liquid Chillers

Product Model Number(s): 19XR and 19XRV Heat Exchanger Frame 2, 3, 4, 5, 6, 7, 8, AA, AB, BC, CC, CD (200 to 3000 tons)

Product Category: Chillers

Product Sub-Category: Chillers - Water Cooled

General Description: High efficiency hermetic centrifugal chillers (single and dual stage compressors).

Mounting Description: Base Mounted Rigid Chillers; Rigid Wall Mounted Control Box on Rigid or Flexible Wall

Tested Seismic Enhancements: None

Applicant Information

Applicant Company Name: Pre Compliance

Contact Person: Katie M Braman

Mailing Address: 324 Northwest Hill Street, Bend, OR 97703

Telephone: (541) 241-2310 Email: katie@go-pre.com

Title: Program Manager

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BY: Mohammad Karim
DATE: 10/06/2026

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

Company Name: PRE COMPLIANCE

Name: Andrew Coughlin California License Number: S6082

Mailing Address: 324 NW Hill St, Bend, OR 97703

Telephone: (415) 635-8461 Email: Andy@go-pre.com

Certification Method

☐ GR-63-Core ☒ ICC-ES AC156 ☐ IEEE 344 ☐ IEEE 693 ☐ NEBS 3

☐ Other (Please Specify):

Testing Laboratory

Company Name: U.S. ARMY ENGINEER RESEARCH AND DEVELOPMENT CENTER, CONSTRUCTION ENGINEERING RESEARCH LABORATORY (CERL)

Contact Person: James Wilcoski

Mailing Address: 2902 Newmark Dr., Champaign IL 61822-1076

Telephone: (217) 373-4565 Email: james.wilcoski@usace.army.mil

Company Name: UNIVERSITY OF BUFFALO (SEESL)

Contact Person: Yushan Fu

Mailing Address: 212 Ketter Hall, Buffalo NY 14260

Telephone: (716) 645-4377 Email: yushanfu@buffalo.edu

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Seismic Parameters

Certified Response Spectral Acceleration Factors:(F_p/W_p)

Horizontal	(A Flx-H), g=	3.36 (@ SDS 2.10 at z/h = 1.0; 2.64 (@SDS =2.64 at z/h = 0.0)	(A Rig-H), g=	2.26 (@ SDS 2.10 at z/h = 1.0); 1.76 (SDS 1.64 at z/h = 1.0)
Vertical	(A Flx-V), g=	1.62 (@ SDS = 2.42 at z/h = 0.0); 1.74 (SDS 2.64 at z/h = 0.0)	(A Rig-V), g=	0.65 (@ SDS 2.42 at z/h = 0.0); 0.70 (SDS= 2.64 at z/h = 0.0)

S_{DS} (Design spectral response acceleration at short period, g) = 2.10 at z/h = 1.0 & 2.42 at z/h = 0.0 for Frames 2 thru 8; 1.64 at z/h = 1.0 & 2.64 at z/h = 0.0 for Frames AA thru CD; See Table 2 for Control Box

Hf (Force amplification height factor) = 1.3 @ z/h = 1; 1.0 @ z/h =0

Ru (Structure ductility redution factor) = 3.5 @ z/h = 1; 1.0 @ z/h =0

I_p (Importance factor) = 1.5

z/h (Height ratio factor) = 0 and 1

HCAI Approval (For Office Use Only) **- Approval Expires on 10/06/2032**

Date: 10/6/2026

Name: Mohammad Karim Title: Supervisor, Health Facilities

Condition of Approval (if applicable):

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SPECIAL SEISMIC CERTIFICATION
CERTIFIED COMPONENTS

Manufacturer: Carrier Corporation
Product Type: Chillers – Water Cooled
Model Line: 19XR and 19XRV Hermetic Centrifugal Chiller

Seismic Parameters		Building Codes
S_{DS} = 2.10 g for z/h=1,R_μ=1.3,H_f=3.5 S_{DS} = 2.42g for z/h=0,R_μ=1.0,H_f=1.0	I_p=1.5	CBC 2025

TABLE 1A

Mounting Configuration: Base Mounted - Rigid

Construction Summary

Carbon Steel

Options Summary

19XR and 19XRV Heat Exchanger Frame 2, 3, 4, 5, 6, 7, 8, (200 to 1500 tons)

Frame	Evaporator Size	Condenser Size	Capacity Range (tons)	Max. Dimensions (in) D	W	H	Wt. (lb)	Notes	UUT
2	22	22	299	169.3	73.1	75.25	15,209		3
	20-22	20-22	200-300	169.3	73.1	75.25	15,281		Interp.
3	30-32	30-32	200-500	196.8	73.1	81.6	24,582		Interp.
	35-37	35-37	200-500	217.3	73.1	81.6	26,092		Interp.
4	40-42	40-42	300-550	196.8	75.25	84.8	29,772		Interp.
	45-47	45-47	300-600	217.8	75.25	84.8	31,872		Interp.
5	50-54	50-54	300-650	200.5	80.9	86.4	36,305		Interp.
	5A-5C	5A-5C							Interp.
	5K-5R	5K-5R							Interp.
	55-59	55-59	300-800	221	80.9	86.4	38,003		Interp.
	5F-5H	5F-5H							Interp.
	5T-5Z	5T-5Z							Interp.
6	60-64	60-64	600-650	200.8	83.8	88.4	38,805		Interp.
	6K-6R	6K-6R							Interp.
	65-69	65-69	600-800	221.3	83.8	88.4	40,910		Interp.
	6T-6Z	6T-6Z							Interp.
7	70-74	70-74	600-1200	237.8	114.4	117.5	50,021		Interp.
	7K-7R	7K-7R							Interp.
	75-79	75-79	900-1300	261.8	114.4	117.5	55,211		Interp.
	7T-7Z	7T-7Z							Interp.
8	80-84	80-84	900-1300	238.5	125	119.3	64,938		Interp.
	8K-8R	8K-8R							Interp.
	85-89	85-89	900-1500	262.5	125	119.3	68,911		Interp.
	8T-8Z	8T-8Z							Interp.
	8Z	89	1000	262	125	119.3	60,401		4
	89	89	1500	262	125	119.3	68,839		5

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SPECIAL SEISMIC CERTIFICATION CERTIFIED COMPONENTS

Manufacturer: Carrier Corporation
Product Type: Chillers – Water Cooled
Model Line: 19XR and 19XRV Hermetic Centrifugal Chiller

Seismic Parameters		Building Codes
S_{DS} = 1.64 g for z/h=1,R_μ=1.3,H_f=3.5 S_{DS} = 2.64 g for z/h=0,R_μ=1.0,H_f=1.0	I_p=1.5	CBC 2025

TABLE 1B

Mounting Configuration: Base Mounted - Rigid

Construction Summary

Carbon Steel

Options Summary

19XR and 19XRV Heat Exchanger Frame AA, AB, BC, CC, CD (1500 to 3000 tons)

Frame	Evaporator Size	Condenser Size	Capacity Range (tons)	Max. Dimensions (in) D	W	H	Wt. (lb)	Notes	UUT
A-A	A40-A42 A45-A47 A4A-A4C A4F-A4H	A40-A42 A45-A47 A4A-A4C A4F-A4H	1500-2250	230.5	125.4	138.1	107,073		Interp.
A-A	A60-A62 A65-A67 A6A-A6C A6F-A6H	A60-A62 A65-A67 A6A-A6C A6F-A6H		254.5	125.4	138.1	107,073		Interp.
A-B	A40-A42 A45-A47 A4A-A4C A4F-A4H	B40-B42 B45-B47 B4A-B4C B4F-B4H	1500-2250	236.5	129.6	138.1	107,073		Interp.
	A60-A62 A65-A67 A6A-A6C A6F-A6H	B60-B62 B65-B67 B6A-B6C B6F-B6H		258.5	129.6	138.1	107,073		Interp.
B-C	B60-B62 B65-B67 B6A-B6C B6F-B6H	C60-C62 C65-C67 C6A-C6C C6F-C6H	2250-3000	264.3	144	108.3	150,000		Interp.
C-C	C60-C62 C65-C67 C6A-C6C C6F-C6H	C60-C62 C65-C67 C6A-C6C C6F-C6H		264.3	144.5	144.5	155,892		Interp.
C-D	C60-C62 C65-C67 C6A-C6C C6F-C6H	D60-D62 D65-D67 D6A-D6C D6F-D6H		264.3	156.3	150.5	155,892		Interp.

Notes: UUT 5 on Table 1A serves as the bookending unit, Frames AA - CD are certified to an S_{DS} =1.64 g at z/h = 1.0; S_{DS} = 2.64 g at z/h = 0

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SPECIAL SEISMIC CERTIFICATION CERTIFIED COMPONENTS

Manufacturer: Carrier Corporation
Product Type: Chillers – Water Cooled
Model Line: 19XR and 19XRV Hermetic Centrifugal Chiller

Seismic Parameters		Building Codes
S_{DS} = 1.64 g for z/h=1,R_μ=1.3,H_f=3.5 S_{DS} = 2.64 g for z/h=0,R_μ=1.0,H_f=1.0	I_p=1.5	CBC 2025

TABLE 1B

Mounting Configuration: Base Mounted - Rigid

Construction Summary

Carbon Steel

Options Summary

19XR and 19XRV Heat Exchanger Frame AA, AB, BC, CC, CD (1500 to 3000 tons)

Frame	Evaporator Size	Condenser Size	Capacity Range (tons)	Max. Dimensions (in)			Wt. (lb)	Notes	UUT
				D	W	H			
C-D	C67	D67	3000	264.5	156.3	150.5	155,892	Tested in two segments (6A & 6B)	6

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Notes: UUT 5 on Table 1A serves as the bookending unit, Frames AA - CD are certified to an S_{DS} =1.64 g at z/h = 1.0; S_{DS} = 2.64 g at z/h = 0
Maximum height and operating weight listed.
Refer to UUT 6A for condenser and economizer section.
Refer to UUT 6B for cooler and compressor section.

SPECIAL SEISMIC CERTIFICATION CERTIFIED COMPONENTS

Pre No. 261977-01-R0

Manufacturer: Carrier Corporation
Product Type: Control Box
Model Line: 19XR and 19XRV Hermetic Centrifugal Chiller

Seismic Parameters		Building Codes
S_{DS} = 2.00 g for z/h=1,R_μ=1.3,H_f=3.5 S_{DS} = 2.50 g for z/h=0,R_μ=1.0,H_f=1.0	I_p=1.5	CBC 2025

TABLE 2

Mounting Configuration: Rigid Wall Mounted Control Box on Rigid or Flexibly Supported Wall

Construction Summary

Carbon Steel

Options Summary

Component (Manufacturer)	Frame	Part No.	Voltage/Hertz	Material	Weight (lbs.)	UUT
Control Box (Gaston)	XR2 XR3 XR4 XR5 XRE XRC	19XR0403070*	115/60	Painted Carbon Sheet Metal	106	7,8

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SPECIAL SEISMIC CERTIFICATION
CERTIFIED SUBCOMPONENTS

Manufacturer: Carrier Corporation
Product Type: Chillers – Water Cooled
Model Line: 19XR and 19XRV Hermetic Centrifugal Chiller

Seismic Parameters		Building Codes
S_{DS} = 2.10 g for z/h=1,R_μ=1.3,H_f=3.5	I_p=1.5	CBC 2025
S_{DS} = 2.42g for z/h=0,R_μ=1.0,H_f=1.0		

TABLE 3A

Table Description: Evaporator (Cooler)

Component (Manufacturer)	Frame	Evaporator Size	Tube Size	Material	Weight (lb.)	UUT
Evaporator (Carrier)	2	20	3/4"Ø	Copper Tubes & Carbon Steel Shell	3407	Interp.
		21	3/4"Ø		3555	Interp.
		22	3/4"Ø		3711	3
	3	30	3/4"Ø		4071	Interp.
		31	3/4"Ø		4253	Interp.
		32	3/4"Ø		4445	Interp.
		35	3/4"Ø		4343	Interp.
		36	3/4"Ø		4551	Interp.
		37	3/4"Ø		4769	Interp.
	4	40	3/4"Ø		4908	Interp.
		41	3/4"Ø		5078	Interp.
		42	3/4"Ø		5226	Interp.
		45	3/4"Ø		5363	Interp.
		46	3/4"Ø		5559	Interp.
		47	3/4"Ø		5730	Interp.
	5	5A	3/4"Ø		5124	Interp.
		5B	3/4"Ø		5177	Interp.
		5C	3/4"Ø		5243	Interp.
		5F	3/4"Ø		5577	Interp.
		5G	3/4"Ø		5640	Interp.
		5H	3/4"Ø		5716	Interp.
		5K	1"Ø		4993	Interp.
		5L	1"Ø		5090	Interp.
		5M	1"Ø		5165	Interp.
		5P	1"Ø		5041	Interp.
		5Q	1"Ø		5131	Interp.
		5R	1"Ø		5214	Interp.
		5T	1"Ø		5425	Interp.
		5U	1"Ø		5534	Interp.
		5V	1"Ø		5620	Interp.
		5X	1"Ø		5484	Interp.
		5Y	1"Ø		5584	Interp.
		5Z	1"Ø		5678	Interp.
		50	3/4"Ø		5713	Interp.

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Manufacturer: Carrier Corporation
Product Type: Chillers – Water Cooled
Model Line: 19XR and 19XRV Hermetic Centrifugal Chiller

Seismic Parameters		Building Codes
S_{DS} = 2.10 g for z/h=1,R_μ=1.3,H_f=3.5 S_{DS} = 2.42g for z/h=0,R_μ=1.0,H_f=1.0	I_p=1.5	CBC 2025

TABLE 3A

Table Description: Evaporator (Cooler)

Component (Manufacturer)	Frame	Evaporator Size	Tube Size	Material	Weight (lb.)	UUT
Evaporator (Carrier)	5	51	3/4"Ø	Copper Tubes & Carbon Steel Shell	5940	Interp.
		52	3/4"Ø		6083	Interp.
		53	3/4"Ø		6141	Interp.
		54	3/4"Ø		6192	Interp.
		55	3/4"Ø		6257	Interp.
		56	3/4"Ø		6517	Interp.
		57	3/4"Ø		6682	Interp.
		58	3/4"Ø		6751	Interp.
		59	3/4"Ø		6811	Interp.
	6	6K	1"Ø		5716	Interp.
		6L	1"Ø		5804	Interp.
		6M	1"Ø		5894	Interp.
		6P	1"Ø		5768	Interp.
		6Q	1"Ø		5852	Interp.
		6R	1"Ø		5938	Interp.
		6T	1"Ø		6230	Interp.
		6U	1"Ø		6330	Interp.
		6V	1"Ø		6433	Interp.
		6X	1"Ø		6293	Interp.
		6Y	1"Ø		6388	Interp.
		6Z	1"Ø		6487	Interp.
		60	3/4"Ø		6719	Interp.
		61	3/4"Ø		6895	Interp.
		62	3/4"Ø		7038	Interp.
		63	3/4"Ø		7103	Interp.
		64	3/4"Ø		7161	Interp.
		65	3/4"Ø		7392	Interp.
		66	3/4"Ø		7594	Interp.
		67	3/4"Ø		7759	Interp.
		68	3/4"Ø		7839	Interp.
		69	3/4"Ø		7905	Interp.
	7	7K	1"Ø		8728	Interp.
		7L	1"Ø		8959	Interp.
		7M	1"Ø		9161	Interp.

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Manufacturer: Carrier Corporation
Product Type: Chillers – Water Cooled
Model Line: 19XR and 19XRV Hermetic Centrifugal Chiller

Seismic Parameters		Building Codes
S_{DS} = 2.10 g for z/h=1,R_μ=1.3,H_f=3.5 S_{DS} = 2.42g for z/h=0,R_μ=1.0,H_f=1.0	I_p=1.5	CBC 2025

TABLE 3A

Table Description: Evaporator (Cooler)

Component (Manufacturer)	Frame	Evaporator Size	Tube Size	Material	Weight (lb.)	UUT
Evaporator (Carrier)	7	7P	1"Ø	Copper Tubes & Carbon Steel Shell	8792	Interp.
		7Q	1"Ø		9023	Interp.
		7R	1"Ø		9929	Interp.
		7T	1"Ø		9431	Interp.
		7U	1"Ø		9698	Interp.
		7V	1"Ø		9932	Interp.
		7X	1"Ø		9510	Interp.
		7Y	1"Ø		9777	Interp.
		7Z	1"Ø		10016	Interp.
		70	3/4"Ø		9942	Interp.
		71	3/4"Ø		10330	Interp.
		72	3/4"Ø		10632	Interp.
		73	3/4"Ø		10715	Interp.
		74	3/4"Ø		10790	Interp.
		75	3/4"Ø		10840	Interp.
		76	3/4"Ø		11289	Interp.
		77	3/4"Ø		11638	Interp.
		78	3/4"Ø		11738	Interp.
		79	3/4"Ø		11828	Interp.
	8	8K	1"Ø		11153	Interp.
		8L	1"Ø		11400	Interp.
		8M	1"Ø		11650	Interp.
		8P	1"Ø		11219	Interp.
		8Q	1"Ø		11470	Interp.
		8R	1"Ø		11719	Interp.
		8T	1"Ø		12069	Interp.
		8U	1"Ø		12357	Interp.
		8V	1"Ø		12645	Interp.
		8X	1"Ø		12152	Interp.
		8Y	1"Ø		12444	Interp.
		8Z	1"Ø		12733	4
		80	3/4"Ø		12664	Interp.
		81	3/4"Ø		12998	Interp.
		82	3/4"Ø		13347	Interp.

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Manufacturer: Carrier Corporation
Product Type: Chillers – Water Cooled
Model Line: 19XR and 19XRV Hermetic Centrifugal Chiller

Seismic Parameters		Building Codes
S_{DS} = 2.10 g for z/h=1,R_μ=1.3,H_f=3.5 S_{DS} = 2.42g for z/h=0,R_μ=1.0,H_f=1.0	I_p=1.5	CBC 2025

TABLE 3A

Table Description: Evaporator (Cooler)

Component (Manufacturer)	Frame	Evaporator Size	Tube Size	Material	Weight (lb.)	UUT
Evaporator (Carrier)	8	83	3/4"Ø	Copper Tubes & Carbon Steel Shell	13437	Interp.
		84	3/4"Ø		13523	Interp.
		85	3/4"Ø		13804	Interp.
		86	3/4"Ø		14191	Interp.
		87	3/4"Ø		14597	Interp.
		88	3/4"Ø		14705	Interp.
		89	3/4"Ø		14808	5

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Product Type: Chillers – Water Cooled
Model Line: 19XR and 19XRV Hermetic Centrifugal Chiller

Seismic Parameters		Building Codes
S_{DS} = 1.64 g for z/h=1,R_μ=1.3,H_f=3.5 S_{DS} = 2.64 g for z/h=0,R_μ=1.0,H_f=1.0	I_p=1.5	CBC 2025

TABLE 3B

Table Description: Evaporator (Cooler)

Component (Manufacturer)	Frame	Evaporator Size	Tube Size	Material	Weight (lb.)	UUT
Evaporator (Carrier)	A4	A4A	1"Ø	Copper Tubes & Carbon Steel Shell	15540	Interp.
		A4B	1"Ø		15794	Interp.
		A4C	1"Ø		16063	Interp.
		A4F	1"Ø		15592	Interp.
		A4G	1"Ø		15845	Interp.
		A4H	1"Ø		16249	Interp.
		A40	3/4"Ø		16877	Interp.
		A41	3/4"Ø		17270	Interp.
		A42	3/4"Ø		17690	Interp.
		A45	3/4"Ø		16968	Interp.
		A46	3/4"Ø		17371	Interp.
		A47	3/4"Ø		17761	Interp.
	A6	A6A	1"Ø		16465	Interp.
		A6B	1"Ø		16758	Interp.
		A6C	1"Ø		17070	Interp.
		A6F	1"Ø		16535	Interp.
		A6G	1"Ø		16829	Interp.
		A6H	1"Ø		17296	Interp.
		A60	3/4"Ø		18354	Interp.
		A61	3/4"Ø		18807	Interp.
		A62	3/4"Ø		19295	Interp.
		A65	3/4"Ø		1295	Interp.
		A66	3/4"Ø		18936	Interp.
		A67	3/4"Ø		18936	Interp.
	B6	B6A	1"Ø		22819	Interp.
		B6B	1"Ø		23299	Interp.
		B6C	1"Ø		23829	Interp.
		B6F	1"Ø		23139	Interp.
		B6G	1"Ø		23648	Interp.
		B6H	1"Ø		24171	Interp.
		B60	3/4"Ø		24704	Interp.
		B61	3/4"Ø		25337	Interp.

Notes: UUT 5 on Table 2A serves as bookending unit, Frames A4 - C6 are certified to an S_{DS} =1.64 g at z/h = 1.0; S_{DS} = 2.64 g at z/h = 0

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Manufacturer: Carrier Corporation
Product Type: Chillers – Water Cooled
Model Line: 19XR and 19XRV Hermetic Centrifugal Chiller

Seismic Parameters		Building Codes
S_{DS} = 1.64 g for z/h=1,R_μ=1.3,H_f=3.5 S_{DS} = 2.64 g for z/h=0,R_μ=1.0,H_f=1.0	I_p=1.5	CBC 2025

TABLE 3B

Table Description: Evaporator (Cooler)

Component (Manufacturer)	Frame	Evaporator Size	Tube Size	Material	Weight (lb.)	UUT
Evaporator (Carrier)	B6	B62	3/4"Ø	Copper Tubes & Carbon Steel Shell	25964	Interp.
		B65	3/4"Ø		25014	Interp.
		B66	3/4"Ø		25631	Interp.
		B67	3/4"Ø		26264	Interp.
	C6	C6A	1"Ø		28641	Interp.
		C6B	1"Ø		29167	Interp.
		C6C	1"Ø		29750	Interp.
		C6F	1"Ø		28929	Interp.
		C6G	1"Ø		29478	Interp.
		C6H	1"Ø		30083	Interp.
		C60	3/4"Ø		30825	Interp.
		C61	3/4"Ø		31536	Interp.
		C62	3/4"Ø		32467	Interp.
		C65	3/4"Ø		31135	Interp.
		C66	3/4"Ø		31851	Interp.
		C67	3/4"Ø		32777	6A

Notes: UUT 5 on Table 2A serves as the bookending unit, Frames A4 - C6 are certified to an S_{DS} =1.64 g at z/h = 1.0; S_{DS} = 2.64 g at z/h = 0

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SPECIAL SEISMIC CERTIFICATION
CERTIFIED SUBCOMPONENTS

Manufacturer: Carrier Corporation
Product Type: Chillers – Water Cooled
Model Line: 19XR and 19XRV Hermetic Centrifugal Chiller

Seismic Parameters		Building Codes
S_{DS} = 2.10 g for z/h=1,R_μ=1.3,H_f=3.5	I_p=1.5	CBC 2025
S_{DS} = 2.42g for z/h=0,R_μ=1.0,H_f=1.0		

TABLE 4A

Table Description: Condenser

Component (Manufacturer)	Frame	Condenser Size	Tube Size	Material	Weight (lb.)	UUT
Condenser (Carrier)	2	20	3/4"Ø	Copper Tubes & Carbon Steel Shell	3373	Interp.
		21	3/4"Ø		3540	Interp.
		22	3/4"Ø		3704	3
	3	30	3/4"Ø		3694	Interp.
		31	3/4"Ø		3899	Interp.
		32	3/4"Ø		4100	Interp.
		35	3/4"Ø		4606	Interp.
		36	3/4"Ø		4840	Interp.
		37	3/4"Ø		5069	Interp.
	4	40	3/4"Ø		5039	Interp.
		41	3/4"Ø		5232	Interp.
		42	3/4"Ø		5424	Interp.
		45	3/4"Ø		5602	Interp.
		46	3/4"Ø		5824	Interp.
		47	3/4"Ø		6044	Interp.
	5	50	3/4"Ø		6090	Interp.
		51	3/4"Ø		6283	Interp.
		52	3/4"Ø		6464	Interp.
		53	3/4"Ø		6529	Interp.
		54	3/4"Ø		6591	Interp.
		55	3/4"Ø		6785	Interp.
		56	3/4"Ø		7007	Interp.
		57	3/4"Ø		7215	Interp.
		58	3/4"Ø		7291	Interp.
		59	3/4"Ø		7363	Interp.
	6	60	3/4"Ø		6764	Interp.
		61	3/4"Ø		6949	Interp.
		62	3/4"Ø		7130	Interp.
		63	3/4"Ø		7199	Interp.
		64	3/4"Ø		7264	Interp.
		65	3/4"Ø		7682	Interp.
		66	3/4"Ø		7894	Interp.
		67	3/4"Ø		8102	Interp.
		68	3/4"Ø		8182	Interp.

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SPECIAL SEISMIC CERTIFICATION
CERTIFIED SUBCOMPONENTS

Manufacturer: Carrier Corporation
Product Type: Chillers – Water Cooled
Model Line: 19XR and 19XRV Hermetic Centrifugal Chiller

Seismic Parameters		Building Codes
S_{DS} = 2.10 g for z/h=1,R_μ=1.3,H_f=3.5	I_p=1.5	CBC 2025
S_{DS} = 2.42g for z/h=0,R_μ=1.0,H_f=1.0		

TABLE 4A

Table Description: Condenser

Component (Manufacturer)	Frame	Condenser Size	Tube Size	Material	Weight (lb.)	UUT
Condenser (Carrier)	6	69	3/4"Ø	Copper Tubes & Carbon Steel Shell	8258	Interp.
	7	70	3/4"Ø		10786	Interp.
		71	3/4"Ø		11211	Interp.
		72	3/4"Ø		11622	Interp.
		73	3/4"Ø		11737	Interp.
		74	3/4"Ø		11775	Interp.
		75	3/4"Ø		11859	Interp.
		76	3/4"Ø		12345	Interp.
		77	3/4"Ø		12814	Interp.
		78	3/4"Ø		12949	Interp.
		79	3/4"Ø		12994	Interp.
	8	80	3/4"Ø		12753	Interp.
		81	3/4"Ø		13149	Interp.
		82	3/4"Ø		13545	Interp.
		83	3/4"Ø		13872	Interp.
		84	3/4"Ø		14217	Interp.
		85	3/4"Ø		14008	Interp.
		86	3/4"Ø		14465	Interp.
		87	3/4"Ø		14923	Interp.
		88	3/4"Ø		15311	Interp.
		89	3/4"Ø		15721	4,5

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SPECIAL SEISMIC CERTIFICATION
CERTIFIED SUBCOMPONENTS

Manufacturer: Carrier Corporation
Product Type: Chillers – Water Cooled
Model Line: 19XR and 19XRV Hermetic Centrifugal Chiller

Seismic Parameters		Building Codes
S_{DS} = 1.64 g for z/h=1,R_μ=1.3,H_f=3.5 S_{DS} = 2.64 g for z/h=0,R_μ=1.0,H_f=1.0	I_p=1.5	CBC 2025

TABLE 4B

Table Description: Condenser

Component (Manufacturer)	Frame	Condenser Size	Tube Size	Material	Weight (lb.)	UUT
Condenser (Carrier)	A4	A4A	1"Ø	Copper Tubes & Carbon Steel Shell	17089	Interp.
		A4B	1"Ø		17472	Interp.
		A4C	1"Ø		17812	Interp.
		A4F	1"Ø		17076	Interp.
		A4G	1"Ø		17405	Interp.
		A4H	1"Ø		17821	Interp.
		A40	3/4"Ø		18542	Interp.
		A41	3/4"Ø		19062	Interp.
		A42	3/4"Ø		19565	Interp.
		A45	3/4"Ø		18493	Interp.
		A46	3/4"Ø		19063	Interp.
		A47	3/4"Ø		19578	Interp.
	A6	A6A	1"Ø		18359	Interp.
		A6B	1"Ø		18806	Interp.
		A6C	1"Ø		19202	Interp.
		A6F	1"Ø		18356	Interp.
		A6G	1"Ø		18739	Interp.
		A6H	1"Ø		19225	Interp.
		A60	3/4"Ø		20139	Interp.
		A61	3/4"Ø		20745	Interp.
		A62	3/4"Ø		21330	Interp.
		A65	3/4"Ø		20095	Interp.
		A66	3/4"Ø		20758	Interp.
		A67	3/4"Ø		21357	Interp.
	B4	B4A	1"Ø		19217	Interp.
		B4B	1"Ø		19793	Interp.
		B4C	1"Ø		20254	Interp.
		B4F	1"Ø		19217	Interp.
		B4G	1"Ø		19721	Interp.
		B4H	1"Ø		20318	Interp.
		B40	3/4"Ø		21217	Interp.
		B41	3/4"Ø		21965	Interp.

Notes: UUT 5 on Table 3A serves as the bookending unit, Frames A4 - C6 are certified to an S_{DS} =1.64 g at z/h = 1.0; S_{DS} = 2.64 g at z/h = 0

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SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENTS

Manufacturer: Carrier Corporation
Product Type: Chillers – Water Cooled
Model Line: 19XR and 19XRV Hermetic Centrifugal Chiller

Seismic Parameters		Building Codes
S_{DS} = 1.64 g for z/h=1,R_μ=1.3,H_f=3.5 S_{DS} = 2.64 g for z/h=0,R_μ=1.0,H_f=1.0	I_p=1.5	CBC 2025

TABLE 4B

Table Description: Condenser

Component (Manufacturer)	Frame	Condenser Size	Tube Size	Material	Weight (lb.)	UUT
Condenser (Carrier)	B4	B42	3/4"Ø	Copper Tubes & Carbon Steel Shell	22581	Interp.
		B45	3/4"Ø		21173	Interp.
		B46	3/4"Ø		21909	Interp.
		B47	3/4"Ø		22653	Interp.
	B6	B6A	1"Ø		20794	Interp.
		B6B	1"Ø		21465	Interp.
		B6C	1"Ø		22002	Interp.
		B6F	1"Ø		20806	Interp.
		B6G	1"Ø		21393	Interp.
		B6H	1"Ø		22088	Interp.
		B60	3/4"Ø		23061	Interp.
		B61	3/4"Ø		23932	Interp.
		B62	3/4"Ø		24649	Interp.
		B65	3/4"Ø		23022	Interp.
		B66	3/4"Ø		23849	Interp.
	B6	B67	3/4"Ø		24745	Interp.
	C6	C6A	1"Ø		27676	Interp.
		C6B	1"Ø		28315	Interp.
		C6C	1"Ø		28918	Interp.
		C6F	1"Ø		27774	Interp.
		C6G	1"Ø		28457	Interp.
		C6H	1"Ø		29223	Interp.
		C60	3/4"Ø		29857	Interp.
		C61	3/4"Ø		30881	Interp.
		C62	3/4"Ø		31872	Interp.
		C65	3/4"Ø		29982	Interp.
		C66	3/4"Ø		31064	Interp.
		C67	3/4"Ø		32186	Interp.
	D6	D6A	1"Ø		35286	Interp.
		D6B	1"Ø		36328	Interp.
		D6C	1"Ø		37288	Interp.
		D6F	1"Ø		34447	Interp.

Notes: UUT 5 on Table 3A serves as the bookending unit, Frames A4 - C6 are certified to an S_{DS} =1.64 g at z/h = 1.0; S_{DS} = 2.64 g at z/h = 0

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SPECIAL SEISMIC CERTIFICATION
CERTIFIED SUBCOMPONENTS

Manufacturer: Carrier Corporation
Product Type: Chillers – Water Cooled
Model Line: 19XR and 19XRV Hermetic Centrifugal Chiller

Seismic Parameters		Building Codes
S_{DS} = 1.64 g for z/h=1,R_μ=1.3,H_f=3.5 S_{DS} = 2.64 g for z/h=0,R_μ=1.0,H_f=1.0	I_p=1.5	CBC 2025

TABLE 4B

Table Description: Condenser

Component (Manufacturer)	Frame	Condenser Size	Tube Size	Material	Weight (lb.)	UUT
Condenser (Carrier)	D6	D6G	1"Ø	Copper Tubes & Carbon Steel Shell	35637	Interp.
		D6H	1"Ø		36663	Interp.
		D60	3/4"Ø		38296	Interp.
		D61	3/4"Ø		39624	Interp.
		D62	3/4"Ø		41031	Interp.
		D65	3/4"Ø		37624	Interp.
		D66	3/4"Ø		38837	Interp.
		D67	3/4"Ø		40460	6B

Notes: UUT 5 on Table 3A serves as the bookending unit, Frames A4 - C6 are certified to an S_{DS} =1.64 g at z/h = 1.0; S_{DS} = 2.64 g at z/h = 0

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SPECIAL SEISMIC CERTIFICATION
CERTIFIED SUBCOMPONENTS

Manufacturer: Carrier Corporation
Product Type: Chillers – Water Cooled
Model Line: 19XR and 19XRV Hermetic Centrifugal Chiller

Seismic Parameters		Building Codes
S_{DS} = 2.10 g for z/h=1,R_μ=1.3,H_f=3.5	I_p=1.5	CBC 2025
S_{DS} = 2.42g for z/h=0,R_μ=1.0,H_f=1.0		

TABLE 5A

Table Description: Compressor

Component (Manufacturer)	Frame	Type	Voltage	Material	Weight (lbs.)	UUT
Compressor (Carrier)	XR2	Standard	200-575V	Carbon Steel/Copper	2300	Interp.
		High	200-575V		2300	Interp.
	XR3	Standard	200-575V		2816	Interp.
		High	200-575V		2816	Interp.
	XR4	Low	200-575V		3425	Interp.
		Low	200-575V		4211	Interp.
		Standard	2400-4160V		3425	Interp.
		Standard	2400-4160V		4211	Interp.
		Standard	6300-6900V		3425	Interp.
		Standard	6300-6900V		4211	Interp.
		High	200-575V		3425	Interp.
		High	200-575V		4211	Interp.
		High	2400-4160V		3425	Interp.
		High	2400-4160V		4211	Interp.
		High	6300-6900V		3425	Interp.
		High	6300-6900V		4211	Interp.
	XR5	Standard	200-575V		7285	Interp.
		Standard	2400-4160V		7285	Interp.
		Standard	6300-6900V		7285	Interp.
		High	200-575V		7285	Interp.
		High	2400-4160V		7285	Interp.
		High	6300-6900V		7285	Interp.
		High	10000-11000V		7285	Interp.
		High	13800V		7285	4
	XRC	High	230-575V		3265	Interp.
		High	3000-6900V		3265	Interp.
		High	10000V		3265	Interp.
		High	11000V		3265	Interp.
	XRE	High	380 / 60		4853	Interp.
		High	416 / 60		4853	Interp.
		High	460 / 60		4853	5
		High	460 / 60		4853	Interp.
		High	400 / 50		4853	Interp.

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SPECIAL SEISMIC CERTIFICATION
CERTIFIED SUBCOMPONENTS

Manufacturer: Carrier Corporation
Product Type: Chillers – Water Cooled
Model Line: 19XR and 19XRV Hermetic Centrifugal Chiller

Seismic Parameters		Building Codes
S_{DS} = 1.64 g for z/h=1,R_μ=1.3,H_f=3.5 S_{DS} = 2.64 g for z/h=0,R_μ=1.0,H_f=1.0	I_p=1.5	CBC 2025

TABLE 5B

Table Description: Compressor

Component (Manufacturer)	Frame	Type	Voltage	Material	Weight (lbs.)	UUT
Compressor (Carrier)	XR6	High	380V	Carbon Steel/Copper	10287	Interp.
		High	400V		10287	Interp.
		High	460V		10287	Interp.
		High	2400V		10287	Interp.
		High	3000V		10287	Interp.
		High	3300V		10287	Interp.
		High	4160V		10287	Interp.
		High	6300V		10287	Interp.
		High	6900V		10287	Interp.
		High	10000V		10287	Interp.
		High	11000V		10287	Interp.
		High	13800V		10287	Interp.
	XR7	High	2400V		16024	Interp.
		High	3000V		16024	Interp.
		High	3300V		16024	Interp.
		High	4160V		16024	Interp.
		High	6300V		16024	Interp.
		High	6900V		16024	Interp.
		High	10000V		16024	Interp.
		High	11000V		16024	Interp.
		High	13800V		16024	6

Notes: UUT 5 on Table 4A serves as the bookending unit, Frames XR6 -XR7 are certified to an S_{DS} =1.64 g at z/h = 1.0; S_{DS} = 2.64 g at z/h = 0

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SPECIAL SEISMIC CERTIFICATION
CERTIFIED SUBCOMPONENTS

Manufacturer: Carrier Corporation
Product Type: Chillers – Water Cooled
Model Line: 19XR and 19XRV Hermetic Centrifugal Chiller

Seismic Parameters		Building Codes
S_{DS} = 2.10 g for z/h=1,R_μ=1.3,H_f=3.5	I_p=1.5	CBC 2025
S_{DS} = 2.42g for z/h=0,R_μ=1.0,H_f=1.0		

TABLE 6A

Table Description: Oil Pump

Component (Manufacturer)	Frame	Nominal Capacity	Voltage/Hertz	Material	Weight (lbs.)	UUT
Oil Pump (Carrier)	XRC	13	208/60	Carbon Steel	125	Interp.
		13	230/60		125	Interp.
		13	380/60		125	Interp.
		13	416/60		125	Interp.
		13	460/60		125	3
		13	230/50		125	Interp.
		13	400/50		125	Interp.
	XR3	13	380/60		125	Interp.
		13	416/60		125	Interp.
		13	460/60		125	Interp.
		13	400/50		125	Interp.
	XR4 & XRC	13	380/60		125	Interp.
		13	416/60		125	Interp.
		13	460/60		125	Interp.
		13	400/50		125	Interp.
	XR5 & XRE	15	208/60		125	Interp.
		15	230/60		125	Interp.
		15	380/60		125	Interp.
		15	460/60		125	4,5
		15	575/60		125	Interp.
		15	230/50		125	Interp.
		15	400/50		125	Interp.

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SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENTS

Manufacturer: Carrier Corporation
Product Type: Chillers – Water Cooled
Model Line: 19XR and 19XRV Hermetic Centrifugal Chiller

Seismic Parameters		Building Codes
S_{DS} = 1.64 g for z/h=1,R_μ=1.3,H_f=3.5 S_{DS} = 2.64 g for z/h=0,R_μ=1.0,H_f=1.0	I_p=1.5	CBC 2025

TABLE 6B

Table Description: Oil Pump

Component (Manufacturer)	Frame	Nominal Capacity	Voltage/Hertz	Material	Weight (lbs.)	UUT
Oil Pump (Carrier)	XR6	20	380/60	Carbon Steel	124	Interp.
		20	415/60		124	Interp.
		20	416/60		124	Interp.
		20	440/60		124	Interp.
		20	460/60		124	Interp.
		20	480/60		124	Interp.
		20	346/50		124	Interp.
		20	380/50		124	Interp.
		20	400/50		124	Interp.
		20	415/50		124	Interp.
		20	440/50		124	Interp.
	XR7	20	380/60		124	Interp.
		20	415/60		124	Interp.
		20	416/60		124	Interp.
		20	440/60		124	Interp.
		20	460/60		124	Interp.
		20	480/60		124	Interp.
		20	346/50		124	Interp.
		20	380/50		124	6

Notes: UUT 5 on Table 5A serves as the bookending unit, Frames XR6 -XR7 are certified to an S_{DS} =1.64 g at z/h = 1.0; S_{DS} = 2.64 g at z/h = 0

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CERTIFIED SUBCOMPONENTS

Manufacturer: Carrier Corporation
Product Type: Chillers – Water Cooled
Model Line: 19XR and 19XRV Hermetic Centrifugal Chiller

Seismic Parameters		Building Codes
S_{DS} = 2.10 g for z/h=1,R_μ=1.3,H_f=3.5	I_p=1.5	CBC 2025
S_{DS} = 2.42g for z/h=0,R_μ=1.0,H_f=1.0		

TABLE 7A

Table Description: Motor

Component (Manufacturer)	Frame Size	Compressor Frame	Part No.	Material	Weight (lbs.)	UUT
Motor (Reliance)	2	XR2	02XR24001501	Carbon Steel	1650	3
	3	XR3	02XR34014801		2057	Interp.
	4	XR4	02XR44007301		3312	Interp.
	5	XR5	02XR54015201		5304	4
Motor (Regal Beloit)	C	XRC	02XF44022201		3700	Interp.
	E	XRE	02XF54014101		5304	5

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SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENTS

Manufacturer: Carrier Corporation
Product Type: Chillers – Water Cooled
Model Line: 19XR and 19XRV Hermetic Centrifugal Chiller

Seismic Parameters		Building Codes
S_{DS} = 1.64 g for z/h=1,R_μ=1.3,H_f=3.5 S_{DS} = 2.64 g for z/h=0,R_μ=1.0,H_f=1.0	I_p=1.5	CBC 2025

TABLE 7B

Table Description: Motor

Component (Manufacturer)	Frame Size	Compressor Frame	Part No.	Material	Weight (lbs.)	UUT
Motor (Regal Beloit)	6	XR6	02XF64009201	Carbon Steel	9370	Interp.
	7	XR7	02XF74009201		10414	6A

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Notes: UUT 5 on Table 6A serves as the bookending unit, Frames 6 -7 are certified to an S_{DS} =1.64 g at z/h = 1.0; S_{DS} = 2.64 g at z/h = 0

SPECIAL SEISMIC CERTIFICATION
CERTIFIED SUBCOMPONENTS

Manufacturer: Carrier Corporation
Product Type: Chillers – Water Cooled
Model Line: 19XR and 19XRV Hermetic Centrifugal Chiller

Seismic Parameters		Building Codes
S_{DS} = 1.64 g for z/h=1,R_μ=1.3,H_f=3.5 S_{DS} = 2.64 g for z/h=0,R_μ=1.0,H_f=1.0	I_p=1.5	CBC 2025

TABLE 8

Table Description: Control Box

Component (Manufacturer)	Frame	Part No.	Voltage/Hertz	Material	Weight (lbs.)	UUT
Control Box (UTEC)	XR6 XR7	19XF04030901	380-480/50-60	Painted Carbon Sheet Metal	190	6A

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BY: Mohammad Karim
DATE: 10/06/2026
CALIFORNIA BUILDING CODE 2025

SPECIAL SEISMIC CERTIFICATION
CERTIFIED SUBCOMPONENTS

Manufacturer: Carrier Corporation
Product Type: Chillers – Water Cooled
Model Line: 19XR and 19XRV Hermetic Centrifugal Chiller

Seismic Parameters		Building Codes
S_{DS} = 2.10 g for z/h=1,R_μ=1.3,H_f=3.5	I_p=1.5	CBC 2025
S_{DS} = 2.42g for z/h=0,R_μ=1.0,H_f=1.0		

TABLE 9

Table Description: VFD (Includes Control Panel)

Component (Manufacturer)	Frame	Drive Code	Drive Amperage	Material	Weight (lbs.)	UUT
VFD (Rockwell)	XR2	2AA	440	Painted Carbon Sheet Metal	650	Interp.
		R0230	230		650	Interp.
		R0335	335		650	3
		R0445	445		650	Interp.
	XR3	2AA	440		650	Interp.
		2CC	608		726	Interp.
		R0230	230		650	Interp.
		R0335	335		650	Interp.
		R0445	445		650	Interp.
	XR4 & XRC	2CC	608		1600	Interp.
		4AA	900		2800	Interp.
		4CC	1200		2850	Interp.
	XR5 & XRE	4AA	900		2800	Interp.
		4CC	1200		2850	4,5

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CERTIFIED SUBCOMPONENTS

Manufacturer: Carrier Corporation
Product Type: Chillers – Water Cooled
Model Line: 19XR and 19XRV Hermetic Centrifugal Chiller

Seismic Parameters		Building Codes
S_{DS} = 2.10 g for z/h=1,R_μ=1.3,H_f=3.5	I_p=1.5	CBC 2025
S_{DS} = 2.42g for z/h=0,R_μ=1.0,H_f=1.0		

TABLE 10A

Table Description: Water Box

Component (Manufacturer)	Frame	Type	Pressure	Material	Weight Adder (lbs.)	UUT
Water Box (Macor)	2	Nozzle in Head	300psi	Carbon Steel	450	3
		Marine	300psi		860	3
	3	Nozzle in Head	300psi		450	Interp.
		Marine	300psi		860	Interp.
	4	Nozzle in Head	300psi		2977	Interp.
		Marine	300psi		3193	Interp.
	5	Nozzle in Head	300psi		3294	Interp.
		Marine	300psi		3874	Interp.
	6	Nozzle in Head	300psi		3496	Interp.
		Marine	300psi		4876	Interp.
	7	Nozzle in Head	300psi		6255	Interp.
		Marine	300psi		8792	4,5
	8	Nozzle in Head	300psi		8160	4,5
		Marine	300psi		9511	Interp.

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SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENTS

Manufacturer: Carrier Corporation
Product Type: Chillers – Water Cooled
Model Line: 19XR and 19XRV Hermetic Centrifugal Chiller

Seismic Parameters		Building Codes
S_{DS} = 1.64 g for z/h=1,R_μ=1.3,H_f=3.5 S_{DS} = 2.64 g for z/h=0,R_μ=1.0,H_f=1.0	I_p=1.5	CBC 2025

TABLE 10B

Table Description: Water Box

Component (Manufacturer)	Frame	Type	Pressure	Material	Weight Adder (lbs.)	UUT
Water Box (Macor)	A-A	Nozzle in Head	150psi	Carbon Steel	0	Interp.
		Marine	300psi		1082	Interp.
	A-B	Nozzle in Head	150psi		0	Interp.
		Marine	300psi		12524	Interp.
	B-C	Nozzle in Head	150psi		0	Interp.
		Marine	150psi		16019	Interp.
	C-C	Nozzle in Head	150psi		0	Interp.
		Marine	300psi		18422	Interp.
	C-D	Nozzle in Head	150psi		0	6A
		Marine	300psi		21589	6B

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Notes: UUT 5 on Table 9A serves as the bookending unit, Frames A-A to C-D are certified to an S_{DS} =1.64 g at z/h = 1.0; S_{DS} = 2.64 g at z/h = 0

SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENTS

Manufacturer: Carrier Corporation
Product Type: Chillers – Water Cooled
Model Line: 19XR and 19XRV Hermetic Centrifugal Chiller

Seismic Parameters		Building Codes
S_{DS} = 2.10 g for z/h=1,R_μ=1.3,H_f=3.5 S_{DS} = 2.42 g for z/h=0,R_μ=1.0,H_f=1.0	I_p=1.5	CBC 2025

TABLE 11A

Table Description: Oil Cooler

Component (Manufacturer)	Frame	Part No.	Description	Material	Weight (lbs.)	UUT
Oil Cooler (Alfa Laval)	XR2 XR3 XR4 XR5 XRC XRE	02XR05013301	Oil Cooler	Brazed Plate Stainless Steel	12	3,4,5

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SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENTS

Manufacturer: Carrier Corporation
Product Type: Chillers – Water Cooled
Model Line: 19XR and 19XRV Hermetic Centrifugal Chiller

Seismic Parameters		Building Codes
S_{DS} = 1.64 g for z/h=1,R_μ=1.3,H_f=3.5 S_{DS} = 2.64 g for z/h=0,R_μ=1.0,H_f=1.0	I_p=1.5	CBC 2025

TABLE 11B

Table Description: Oil Cooler

Component (Manufacturer)	Frame	Part No.	Description	Material	Weight (lbs.)	UUT
Oil Cooler (Alfa Laval)	XR6	02XF65008101		Brazed Plate Stainless Steel	12	Interp.
	XR7	02XF75002701			12	6A

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Notes: UUT 5 on Table 10A serves as the bookending unit, Frames XR6-XR7 are certified to an S_{DS} =1.64 g at z/h = 1.0; S_{DS} = 2.64 g at z/h = 0

SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENTS

Manufacturer: Carrier Corporation
Product Type: Chillers – Water Cooled
Model Line: 19XR and 19XRV Hermetic Centrifugal Chiller

Seismic Parameters		Building Codes
S_{DS} = 2.10 g for z/h=1,R_μ=1.3,H_f=3.5 S_{DS} = 2.42 g for z/h=0,R_μ=1.0,H_f=1.0	I_p=1.5	CBC 2025

TABLE 12

Table Description: Pump Out Unit

Component (Manufacturer)	Frame	Part No.	Material	Weight (lbs.)	UUT
Pump Out Unit (Carrier)	XR2-5,C,E	19XR04035801	Carbon and Stainless Steel	165	5

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SPECIAL SEISMIC CERTIFICATION TESTING SUMMARY

UUT	Model	Test Report	Test Date	Test Laboratory	S_{DS}	z/h	R_μ	H_f	I_p
1	Not Used								
2	Not Used								
3	Hermetic Centrifugal Chiller 19XRV2222287BHH64	2012-0211.00 Rev.1	Feb. 27, 2013	U.S. Army CEERD-CERL	2.10 2.42	1.0 0.0	1.3 1.0	3.5 1.0	1.5
4	Hermetic Centrifugal Chiller 19XRV8Z8955DMBH64	2012-0211.00 Rev.1	Feb. 27, 2013	U.S. Army CEERD-CERL	2.10 2.42	1.0 0.0	1.3 1.0	3.5 1.0	1.5
5	Hermetic Centrifugal Chiller 19XR-8989E06EPH68S	2013-0216.00	Dec. 3, 2012	U.S. Army CEERD-CERL	2.10 2.60	1.0 0.0	1.3 1.0	3.5 1.0	1.5
6A	Hermetic Centrifugal Chiller 19XR-C67D67736ZZG	2014-0418.00	Feb.13-23, 2015	U.S. Army CEERD-CERL	1.64 2.64	1.0 0.0	1.3 1.0	3.5 1.0	1.5
6B	Hermetic Centrifugal Chiller 19XR-C67D67736ZZG	2014-0418.00	Feb.13-23, 2015	U.S. Army CEERD-CERL	1.64 2.64	1.0 0.0	1.3 1.0	3.5 1.0	1.5
7	Control Panel 19XR0403072*	UB CSEE/SEESL-2020-03	Aug. 3 2020	Structural Engineering and Earthquake Simulation	2.0 2.5	1.0 0.0	1.3 1.0	3.5 1.0	1.5
8	Control Panel 19XR0403072*	UB CSEE/SEESL-2020-03	Aug. 4, 2020	Structural Engineering and Earthquake Simulation	2.0 2.5	1.0 0.0	1.3 1.0	3.5 1.0	1.5

Notes:

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SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

UUT 3 Test Report# 2012-0211.00 Rev.1

Manufacturer: Carrier Corporation
Model Line: 19XR and 19XRV Hermetic Centrifugal Chiller
Model Number: 19XRV2222287BHH64
Serial Number: 4712Q22268

Highest Passed Test Level

S_{DS}	z/h	R_μ	H_f	I_p	A_{flx-h}	A_{rig-h}	A_{flx-v}	A_{rig-v}
2.10	1.0	1.3	3.5	1.5	3.36	2.26	1.62	0.65
2.42	0.0	1.0	1.0					

Dimensions/Weights

Depth (in)	Width (in)	Height (in)	Weight (lbs.)
169.25	73.06	75.25	15,209

Lowest Natural Frequency (Hz)

Front-Back	Side-Side	Vertical
19.0	20.0	25.0

Building Codes

CBC 2025

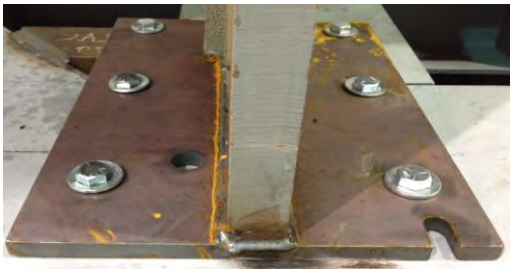
Test Criteria

ICC-ES AC156 (2024)

Construction/Option Summary

Carbon Steel, 19XR Frame 2, Nominal Capacity - 299 tons

UUT Mounting Details:



UUT legs welded to adaptor plates. Adaptor plates bolted with four (4) 1-1/4" grade 5 bolts at each leg for a total of (24) bolts.
Unit maintained structural integrity and remained operational per manufacturer requirement following shake table test. All contents were included in the unit per operating conditions.

List of Included Subcomponents

Description (Manufacturer)	Model # (Material)	Wt. (lbs.)
Evaporator/Cooler Assembly (Carrier)	10XR24046901 (CS & CU)	4730
Evaporator (Carrier)		3711
Cooler Nozzle Arrangement (Carrier)	10XR34001501(CS)	815
Water Box - Nozzle in Head (Macor)		450
Condenser Assembly (Carrier)	09XR24008101 (CS & CU)	4485
Condenser (Carrier)		3704
Condenser Nozzle Arrangement (Carrier)	09XR34004003(CS)	1225
Water Box - Marine (Macor)		860
Compressor/Motor Assembly (Carrier)	02XR24020001 (CS & CU)	3950
Compressor (Carrier)		2300
Motor (Reliance)	02XR24001501(CS)	1650
Oil Pump (Carrier)	02XR44050602(CS)	125
Control Box -no VFD (Whitepath)	19XR04030701 (CS)	34
VFD (Rockwell)	19XVA2AA5KA (CS)	650
Oil Cooler (Alfa Laval)	02XR05013301 (SS)	12

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SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

UUT 4 Test Report# 2012-0211.00 Rev.1

Manufacturer: Carrier Corporation
Model Line: 19XR and 19XRV Hermetic Centrifugal Chiller
Model Number: 19XRV8Z8955DMBH64
Serial Number: 4212Q22174

Highest Passed Test Level

S_{DS}	z/h	R_μ	H_f	I_p	A_{flx-h}	A_{rig-h}	A_{flx-v}	A_{rig-v}
2.10	1.0	1.3	3.5	1.5	3.36	2.26	1.62	0.65
2.42	0.0	1.0	1.0					

Dimensions/Weights

Depth (in)	Width (in)	Height (in)	Weight (lbs.)
262.5	125	119.25	60,401

Lowest Natural Frequency (Hz)

Front-Back	Side-Side	Vertical
6.1	8.5	15.0

Building Codes

CBC 2025

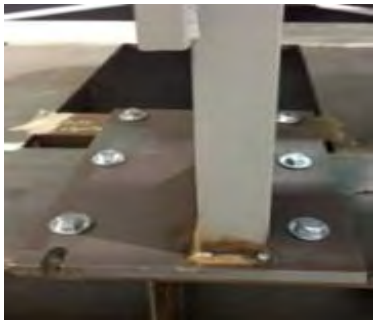
Test Criteria

ICC-ES AC156 (2024)

Construction/Option Summary

Carbon Steel, 19XR Frame 8, Nominal Capacity-1000 tons

UUT Mounting Details:



UUT legs welded to adaptor plates. Adaptor plates bolted with six (6) 3/4" grade 5 bolts at each leg for a total of (24) bolts.
Unit maintained structural integrity and remained operational per manufacturer requirement following shake table test. All contents were included in the unit per operating conditions.

List of Included Subcomponents

Description (Manufacturer)	Model # (Material)	Wt. (lbs.)
Evaporator/Cool Assembly (Carrier)	10XR84046904 (CS & CU)	17933
Evaporator (Carrier)		12733
Cooler Nozzle Arrangement (Carrier)	10XR840011301 (CS)	10342
Water Box - Nozzle in Head (Macor)		8160
Condenser Assembly (Carrier)	09XR84013602 (CS & CU)	20675
Condenser (Carrier)		15721
Condenser Nozzle Arrangement (Carrier)	09XR84013602 (CS)	11262
Water Box - Marine (Macor)		9511
Compressor/Motor Assembly (Carrier)	02XR54020001 (CS & CU)	12125
Compressor (Carrier)		7285
Motor (Reliance)	02XR54015201(CS)	5304
Oil Pump (Carrier)	02XR44050602(CS)	125
Control Box - no VFD (Whitepath)	19XR04030704(CS)	32
VFD (Rockwell)	19XVA4CC5KA(CS)	2850
Oil Cooler (Alfa Laval)	02XR05013301(SS)	12

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SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

UUT 5 Test Report# 2013-0216.00

Manufacturer: Carrier Corporation
Model Line: 19XR and 19XRV Hermetic Centrifugal Chiller
Model Number: 19XR-8989E61EPCD68
Serial Number: 22407

Highest Passed Test Level

S_{DS}	z/h	R_μ	H_f	I_p	A_{flx-h}	A_{rig-h}	A_{flx-v}	A_{rig-v}
2.10	1.0	1.3	3.5	1.5	3.36	2.26	1.74	0.70
2.60	0.0	1.0	1.0					

Dimensions/Weights

Depth (in)	Width (in)	Height (in)	Weight (lbs.)
262.5	125	119.25	68,839

Lowest Natural Frequency (Hz)

Front-Back	Side-Side	Vertical
8.1	11.7	21.8

Building Codes

CBC 2025

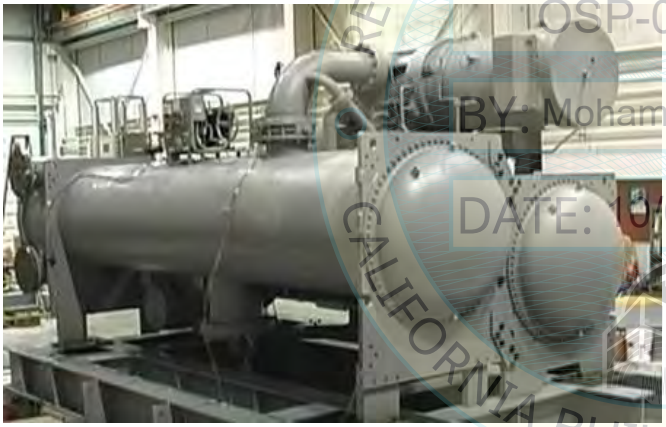
Test Criteria

ICC-ES AC156 (2024)

Construction/Option Summary

Carbon Steel, 19XR Frame8, Nominal Capacity - 1500 tons

UUT Mounting Details:



UUT legs welded to adaptor plates. Adaptor plates bolted with six (6) 3/4" grade 5 bolts at each leg for a total of (24) bolts.
Unit maintained structural integrity and remained operational per manufacturer requirement following shake table test. All contents were included in the unit per operating conditions.

List of Included Subcomponents

Description (Manufacturer)	Model # (Material)	Wt. (lbs.)
Evaporator/Cool Assembly (Carrier)	10XF84000102 (CS & CU)	20285
Evaporator (Carrier)		14808
Cooler Nozzle Arrangement (Carrier)	10XR840011301 (CS)	10342
Water Box - Nozzle in Head (Macor)		8160
Condenser Assembly (Carrier)	09XR84013602 (CS & CU)	20675
Condenser (Carrier)		15721
Condenser Nozzle Arrangement (Carrier)	09XR84013602 (CS)	11262
Water Box - Marine (Macor)		9511
Compressor/Motor Assembly (Carrier)	02XF54000001 (CS & CU)	10803
Compressor (Carrier)		4853
Motor (Regal Beloit)	02XR54014101(CS)	5304
Oil Pump (Carrier)	02XR44050602(CS)	125
Control Box - no VFD (Whitepath)	19XR04030704(CS)	32
VFD (Rockwell)	19XVA4CC5KA(CS)	2850
Oil Cooler (Alfa Laval)	02XR05013301(SS)	12
Pump Out Unit	19XR04035801 (CS & SS)	165

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SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

UUT 6A

Test Report# 2014-0418.00

Manufacturer: Carrier Corporation
Model Line: 19XR and 19XRV Hermetic Centrifugal Chiller
Model Number: 19XR-C67D67736ZZG
Serial Number: 2377274

Highest Passed Test Level

S_{DS}	z/h	R_μ	H_f	I_p	A_{flx-h}	A_{rig-h}	A_{flx-v}	A_{rig-v}
1.64	1.0	1.3	3.5	1.5	2.64	1.76	1.76	0.71
2.64	0.0	1.0	1.0					

Dimensions/Weights

Depth (in)	Width (in)	Height (in)	Weight (lbs.)
264.5	79.0	132.2	77,334

Lowest Natural Frequency (Hz)

Front-Back	Side-Side	Vertical
7.0	11.0	17.0

Building Codes

CBC 2025

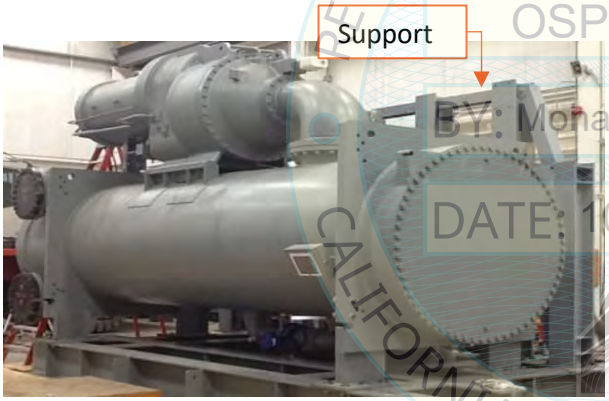
Test Criteria

ICC-ES AC156 (2024)

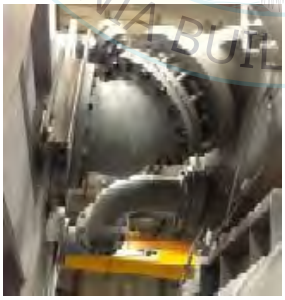
Construction/Option Summary

Cooler & Compressor, Carbon Steel, 19XR Dual Stage XR7, Nominal Capacity- 3000 tons

UUT Mounting Details:



Mounting Detail



Modification/Anomaly

Test anomaly: steel frame to represent condenser section. Rigid connector plates and bolted pipe connection.

UUT legs welded to adaptor plates. Adaptor plates bolted with six (6) 1-1/4" grade 8 bolts at each leg for a total of (16) bolts.
Unit maintained structural integrity and remained operational per manufacturer requirement following shake table test. All contents were included in the unit per operating conditions.

List of Included Subcomponents

Description (Manufacturer)	Model # (Material)	Wt. (lbs.)
Evaporator/Cool Assembly (Carrier)	10XF34000101 (CS & CU)	32777
Evaporator (Carrier)		32777
Cooler Nozzle Arrangement (Carrier)	10XF34001001 (CS)	21589
Water Box - Nozzle in Head (Macor)		
Compressor/Motor Assembly (Carrier)	02XF54000001 (CS & CU)	26438
Compressor (Carrier)		16024
Motor (Regal Beloit)	02XR54015201(CS)	10414
Oil Pump (Carrier)	02XF64050607(CS)	124
Oil Cooler (Alfa Laval)	02XR05013301(SS)	22
Control Panel - no VFD (UTEC)	19XF04030901(CS)	190

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SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

UUT 6B

Test Report# 2014-0418.00

Manufacturer: Carrier Corporation
Model Line: 19XR and 19XRV Hermetic Centrifugal Chiller
Model Number: 19XR-C67D67736ZZG
Serial Number: 2377274

Highest Passed Test Level

S_{DS}	z/h	R_μ	H_f	I_p	A_{flx-h}	A_{rig-h}	A_{flx-v}	A_{rig-v}
1.64	1.0	1.3	3.5	1.5	2.64	1.76	1.76	0.71
2.64	0.0	1.0	1.0					

Dimensions/Weights

Depth (in)	Width (in)	Height (in)	Weight (lbs.)
264.5	77.5	150.3	78,558

Lowest Natural Frequency (Hz)

Front-Back	Side-Side	Vertical
9.0	12.0	22.0

Building Codes

CBC 2025

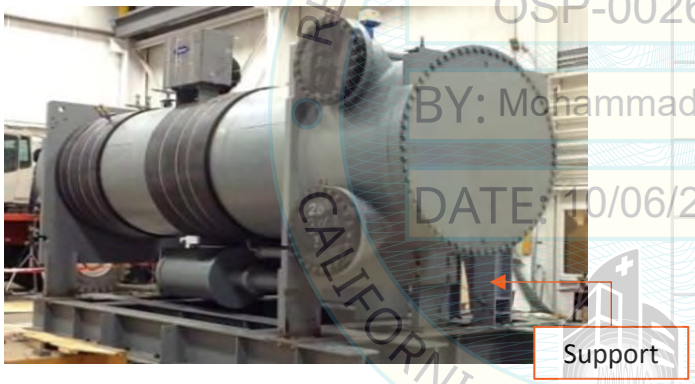
Test Criteria

ICC-ES AC156 (2024)

Construction/Option Summary

Condenser & Economizer, Carbon Steel, 19XR Dual Stage XR7, Nominal Capacity- 3000 tons

UUT Mounting Details:



Mounting Detail

Modification/Anomaly

Test anomaly: steel frame to represent condenser section.
Rigid connector plates and bolted pipe connection.

UUT legs welded to adaptor plates. Adaptor plates bolted with six (6) 1-1/4" grade 8 bolts at each leg for a total of (16) bolts.
Unit maintained structural integrity and remained operational per manufacturer requirement following shake table test. All contents were included in the unit per operating conditions.

List of Included Subcomponents

Description (Manufacturer)	Model # (Material)	Wt. (lbs.)
Condenser Assembly (Carrier)	09XF44001101 (CS & CU)	40460
Condenser (Carrier)		40460
Cooler Nozzle Arrangement (Carrier)	09XF44001803 (CS)	31560
Water Box - Nozzle in Head (Macor)		21589
Economizer Assembly (Carrier)	08XF74001101 (CS)	2467

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SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

UUT 7

Test Report# UB CSEE/SEESL-2020-03

Manufacturer: Carrier Corporation
Model Line: 19XR and 19XRV Hermetic Centrifugal Chiller
Model Number: 19XR0403072*
Serial Number: N/A

Highest Passed Test Level

S_{DS}	z/h	R_μ	H_f	I_p	A_{flx-h}	A_{rig-h}	A_{flx-v}	A_{rig-v}
2.00	1.0	1.3	3.5	1.5	3.20	2.15	1.67	0.67
2.50	0.0	1.0	1.0					

Dimensions/Weights

Depth (in)	Width (in)	Height (in)	Weight (lbs.)
32	6.5	30	106

Lowest Natural Frequency (Hz)

Front-Back	Side-Side	Vertical
N/A	N/A	N/A

Building Codes

CBC 2025

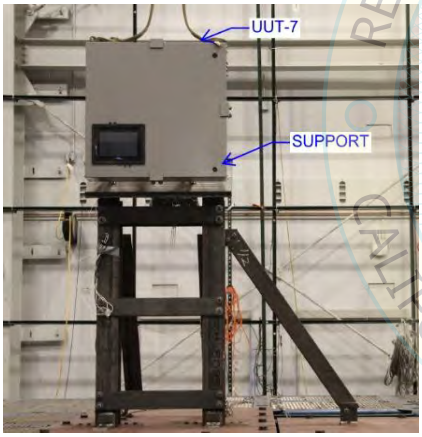
Test Criteria

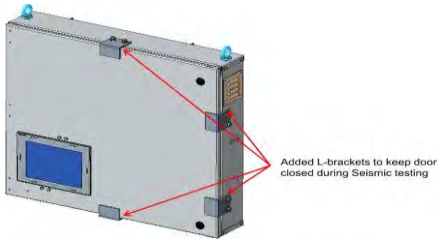
ICC-ES AC156 (2024)

Construction/Option Summary

Carbon Steel

UUT Mounting Details:





L Bracket provide by manufacture with two (2) #8 sheet metal screws each.

UUT attached to fixture with 8- 1/4" sheet metal screw into cooler bracket. Bolted to cooler freestanding support, rigid mounting.

Unit maintained structural integrity and remained operational per manufacturer requirement following shake table test. All contents were included in the unit per operating conditions.

List of Included Subcomponents

Description (Manufacturer)	Model # (Material)	Wt. (lbs.)
PIC6 Control - no VFD (Gaston)	19XR04037229 (CS)	106

HCAi
OSP-0026
BY: Mohammad Rahimi
DATE: 10/06/2026
REVIEWED FOR CODE COMPLIANCE OF CALIFORNIA BUILDING CODE, 2025

SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

UUT 8

Test Report# UB CSEE/SEESL-2020-03

Manufacturer: Carrier Corporation
Model Line: 19XR and 19XRV Hermetic Centrifugal Chiller
Model Number: 19XR0403072*
Serial Number: N/A

Highest Passed Test Level

S_{DS}	z/h	R_μ	H_f	I_p	A_{flx-h}	A_{rig-h}	A_{flx-v}	A_{rig-v}
2.00	1.0	1.3	3.5	1.5	3.20	2.15	1.67	0.67
2.50	0.0	1.0	1.0					

Dimensions/Weights

Depth (in)	Width (in)	Height (in)	Weight (lbs.)
32	6.5	30	106

Lowest Natural Frequency (Hz)

Front-Back	Side-Side	Vertical
N/A	N/A	N/A

Building Codes

CBC 2025

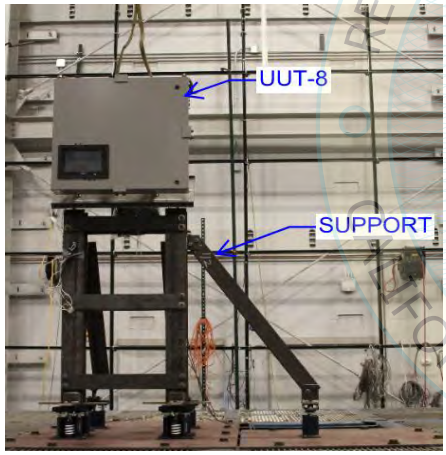
Test Criteria

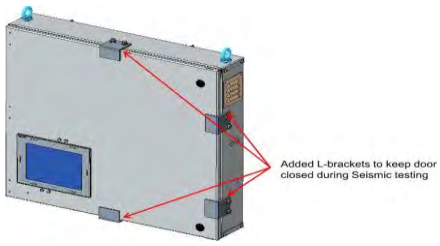
ICC-ES AC156 (2024)

Construction/Option Summary

Carbon Steel

UUT Mounting Details:





L Bracket provide by manufacture with two (2) #8 sheet metal screws each.

UUT attached to fixture with 8- 1/4" sheet metal screw into cooler bracket. Bolted to cooler freestanding support, isolated mounting.

Unit maintained structural integrity and remained operational per manufacturer requirement following shake table test. All contents were included in the unit per operating conditions.

List of Included Subcomponents

Description (Manufacturer)	Model # (Material)	Wt. (lbs.)
PIC6 Control - no VFD (Gaston)	19XR04037229 (CS)	106

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