



DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION
OFFICE OF STATEWIDE HOSPITAL PLANNING AND DEVELOPMENT

APPLICATION FOR HCAI SPECIAL SEISMIC
CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY

APPLICATION #: OSP-0857

HCAI Special Seismic Certification Preapproval (OSP)

Type: ☒ New ☐ Renewal

Manufacturer Information

Manufacturer: Daikin Applied

Manufacturer's Technical Representative: Zach Morris

Mailing Address: 13600 Industrial Park Blvd., Minneapolis, MN 55441

Telephone: (540) 294-5879

Email: zach.morris@daikinapplied.com

Product Information

Product Name: AGZ Trailblazer

Product Model Number(s): AGZ-F Trailblazer 030-230 tons

Product Category: Chillers

Product Sub-Category: Chillers - Air Cooled

General Description: Outdoor Air-Cooled Scroll Compressor Chiller, standard efficiency, Low - GWP R-32 Refrigerant

Mounting Description: Base Mounted Rigid and Spring Vibration Isolated -

Tested Seismic Enhancements: None

Applicant Information

Applicant Company Name: Pre Compliance

Contact Person: Andy Coughlin

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

Telephone: (541) 241-2310

Email: andy@go-pre.com

Title: Principal Engineer



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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 Street, 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

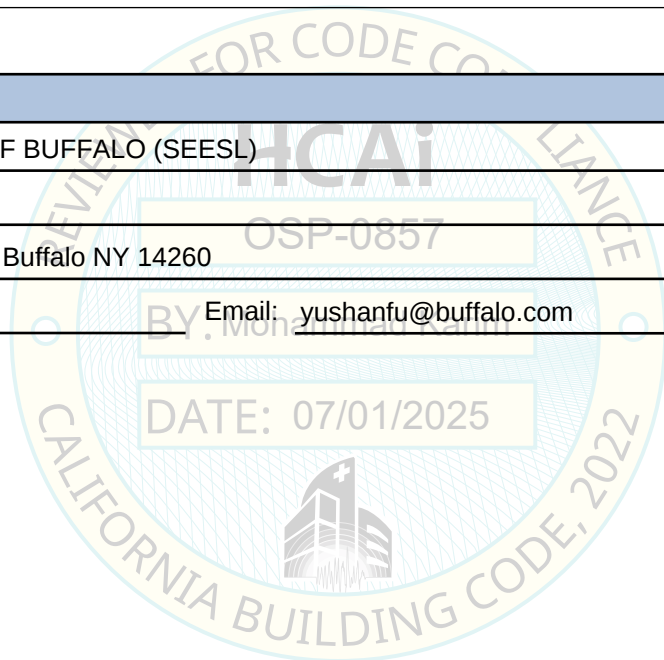
Company Name: UNIVERSITY OF BUFFALO (SEESL)

Contact Person: Yushan Fu

Mailing Address: 212 Ketter Hall, Buffalo NY 14260

Telephone: (716) 645-4377

Email: yushanfu@buffalo.com





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Seismic Parameters

Design Basis of Equipment or Components (F_p/W_p) = 4.50 - $z/h=1.0$ & 1.65 - $z/h=0$ (Isolated) and 3- $z/h=1.0$ & 1.1- $z/h=0$ (rigid)

Sds (Design spectral response acceleration at short period, g) = 2.0 at $z/h=1.0$, 2.20 at $z/h=0$

a_p (Amplification factor) = 2.5 (rigid and spring isolated)

R_p (Response modification factor) = 3 (rigid) & 2.0 (spring isolated)

Ω_0 (System overstrength factor) = 2.0

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

HCAI Approval (For Office Use Only) - Approval Expires on 07/01/2031

Date: 7/1/2025

Name: Mohammad Karim Title: Supervisor, Health Facilities

Special Seismic Certification Valid Up to: Sds (g) = 2.0 z/h = 1

Condition of Approval (if applicable): DATE: 07/01/2025



Pre No. CC241403-01-R2

SPECIAL SEISMIC CERTIFICATION CERTIFIED COMPONENTS

Manufacturer: Daikin Applied
Product Type: Chillers – Air Cooled
Model Line: Trailblazer AGZ-F

Seismic Parameters

$S_{DS} = 2.0g$ for $z/h=1$
 $S_{DS} = 2.2g$ for $z/h=0$ $I_p = 1.5$

Building Codes

CBC 2022

TABLE 1

Mounting Configuration: Base Mounted - Rigid

Construction Summary

Carbon Steel Frame

Options Summary

Standard Efficiency, Low-GWP R-32 Refrigerant

Model Line	Model	Max. Dimensions (in)			Wt. (lb)	Notes	UUT
		D	W	H			
Trailblazer Air-Cooled Scroll Compressor Chillers 030-230 Tons	AGZ002FDDNNDDNN	85.3	88	98.6	3086		Extrap.
	...	85.3	88	98.6	...		Extrap.
	AGZ002FGGNNGGNN	85.3	88	98.6	3280		1
	AGZ004FJJNNHHNN	85.3	88	98.6	3493		Interp.
	...	85.3	88	98.6	...		Interp.
	AGZ004FPLNNLPNN	85.3	88	98.6	3838		Interp.
	AGZ006FSPNNLLNN	127.8	88	98.6	4787		Interp.
	...	127.8	88	98.6	...		Interp.
	AGZ006FUUNNLPNN	127.8	88	98.6	5286		Interp.
	AGZ008FUSNNSUNN	170.3	88	98.6	6259		Interp.
	...	170.3	88	98.6	...		Interp.
	AGZ008FUUNNUUNN	170.3	88	98.6	6630		Interp.
	AGZ010FVVNNUUNN	212.8	88	98.6	7521		Interp.
	...	212.8	88	98.6	...		Interp.
	AGZ010FVVSNSSSN	212.8	88	98.6	7900		Interp.
	AGZ012FVVSNSSVN	255.3	88	98.6	9050		Interp.
	...	255.3	88	98.6	...		Interp.
	AGZ012FVVSNNVVS	255.3	88	98.6	9254		Interp.
	AGZ014FVVVNUUUN	297.8	88	98.6	10255		Interp.

Notes: See Table 2 for bounding units tested in isolated configuration.

SPECIAL SEISMIC CERTIFICATION CERTIFIED COMPONENTS

Manufacturer: Daikin Applied
Product Type: Chillers – Air Cooled
Model Line: Trailblazer AGZ-F

Seismic Parameters
 $S_{DS} = 2.0g$ for $z/h=1$
 $S_{DS} = 2.2g$ for $z/h=0$
 $I_p = 1.5$

Building Codes
CBC 2022

TABLE 2

Mounting Configuration: Base Mounted - Isolated

Construction Summary

Carbon Steel Frame

Options Summary

Standard Efficiency, Low-GWP R-32 Refrigerant

Model Line	Model	Max. Dimensions (in)			Wt. (lb)	Notes	UUT
		D	W	H			
Trailblazer Air-Cooled Scroll Compressor Chillers 030-230 Tons	AGZ002FDDNNDDNN	85.3	88	98.6	3086		Interp.
	...	85.3	88	98.6	...		Interp.
	AGZ002FGGNNGGNN	85.3	88	98.6	3280		Interp.
	AGZ004FJJNNHHNN	85.3	88	98.6	3493		Interp.
	...	85.3	88	98.6	...		Interp.
	AGZ004FPLNNLPNN	85.3	88	98.6	3838		Interp.
	AGZ006FSPNNLLNN	127.8	88	98.6	4787		Interp.
	...	127.8	88	98.6	...		Interp.
	AGZ006FUUNNLPNN	127.8	88	98.6	5286		Interp.
	AGZ008FUSNNSUNN	170.3	88	98.6	6259		Interp.
	...	170.3	88	98.6	...		Interp.
	AGZ008FUUNNUUNN	170.3	88	98.6	6630		Interp.
	AGZ010FVVNUUNN	212.8	88	98.6	7521		Interp.
	...	212.8	88	98.6	...		Interp.
	AGZ010FVVSNSSSN	212.8	88	98.6	7900		Interp.
	AGZ012FVVSNSSVN	255.3	88	98.6	9050		Interp.
	...	255.3	88	98.6	...		Interp.
	AGZ012FVVSNNVSN	255.3	88	98.6	9254		Interp.
	AGZ014FVVNUUUN	297.8	88	98.6	10255		2

Manufacturer: Daikin Applied
Product Type: Chillers – Air Cooled
Model Line: Trailblazer AGZ-F

Seismic Parameters

 $S_{DS} = 2.0g$ for $z/h=1$
 $S_{DS} = 2.2g$ for $z/h=0$
 $I_p = 1.5$

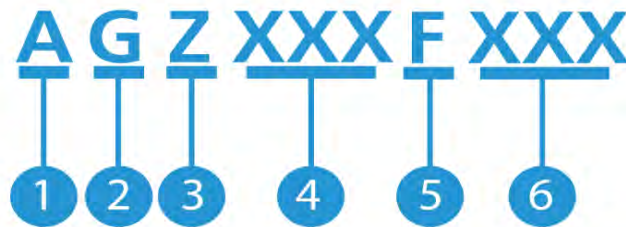
Building Codes

CBC 2022

TABLE 3

Nomenclature

For Reference Only



No.	Description
1	A = Air-Cooled
2	G = Global
3	Z = Scroll Compressor
4	Number of Fans
5	Design Vintage
6	Compressor Code



SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENTS

Manufacturer: Daikin Applied
Product Type: Chillers – Air Cooled
Model Line: Trailblazer AGZ-F

Seismic Parameters
 $S_{DS} = 2.0g$ for $z/h=1$
 $S_{DS} = 2.2g$ for $z/h=0$
 $I_p = 1.5$

Building Codes
CBC 2022

TABLE 4

Table Description: Scroll Compressors

Component (Manufacturer)	Model	Description	Notes	UUT
Scroll Compressor (Danfoss)	DSF090A4ALB	7.5HP, R-32, 400V/3P/50Hz 460V/3P/60Hz, Steel Shell, Cu Winding, 128 lbs.		Extrap.
	DSF100A4ALB	9HP, R-32, 400V/3P/50Hz 460V/3P/60Hz, Steel Shell, Cu Winding, 128 lbs.		Extrap.
	DSF115A4ALB	10hp, R-32, 400V/3P/50Hz 460V/3P/60Hz, Steel Shell, Cu Winding, 141 lbs.		1
	DSF130A4ALB	12hp, R-32, 400V/3P/50Hz 460V/3P/60Hz, Steel Shell, Cu Winding, 141 lbs.		Interp.
	DSF155A4ALB	13hp, R-32, 400V/3P/50Hz 460V/3P/60Hz, Steel Shell, Cu Winding, 148 lbs.		Interp.
	DSF200A4ALA	16hp, R-32, 400V/3P/50Hz 460V/3P/60Hz, Steel Shell, Cu Winding, 158 lbs.		Interp.
	DSF270A4ABA	22hp, R-32, 460V/3P/60Hz, 110/240V module, Steel Shell, Cu Winding, 251 lbs.		Interp.
	DSF325A4ABA	27hp, R-32, 380-415V/3P/50Hz 460V/3P/60Hz, 110/240V module, Steel Shell, Cu Winding, 258 lbs.		Interp.
	DSF485A4ABA	40hp, R-32, 380-415V/3P/50Hz 460V/3P/60Hz, 110/240V module, Steel Shell, Cu Winding, 388 lbs.		2
	DSF530A4ABA	43hp, R-32, 380-415V/3P/50Hz 460V/3P/60Hz, 110/240V module, Steel Shell, Cu Winding, 388 lbs.		2



Manufacturer: Daikin Applied
Product Type: Chillers – Air Cooled
Model Line: Trailblazer AGZ-F

$S_{DS} = 2.0g$ for $z/h=1$

$$I_p = 1.5$$

CBC 2022

Table Description: Coils and Evaporators

Pre Compliance



SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENTS

CBC 2022



COMPLIANCE

SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENTS

Pre No. CC241403-01-R2

Manufacturer: Daikin Applied
Product Type: Chillers – Air Cooled
Model Line: Trailblazer AGZ-F

Seismic Parameters

$$S_{DS} = 2.0g \text{ for } z/h=1$$

S_{DS} = 2.2g for z/h=0

$$I_p = 1.5$$

Building Codes

CBC 2022

TABLE 7

Table Description: Electrical

[illegible]



SPECIAL SEISMIC CERTIFICATION TESTING SUMMARY

SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

UUT 1

Test Report# TR241403-01-R1

Manufacturer: Daikin Applied
Model Line: Trailblazer AGZ-F
Model Number: AGZ002FGGNNGGNN
Serial Number: N/A

Highest Passed Test Level

S _{DS}	z/h	I _p	A _{flx-h}	A _{rig-h}	A _{flx-v}	A _{rig-v}
2.00	1	1.5	3.2	2.4	1.57	0.63
2.35	0					

Dimensions/Weights

Depth (in)	Width (in)	Height (in)	Weight (lbs.)
85.3	88	98.6	3,280

Lowest Natural Frequency (Hz)

Front-Back	Side-Side	Vertical
9.8	8.8	15.2

Building Codes

CBC 2022

Test Criteria

ICC-ES AC156

Construction/Option Summary

Carbon Steel

UUT Mounting Details:



Unit was based mounted rigid with four (4) 3/4" Grade 8 bolts with washers.

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	Model Number
Scroll Compressor (Danfoss)	DSF115A4ALB
Condenser Coils (Sanhua)	101000140
Evaporator (Alfa-Laval)	ACK240-DQ-78
Expansion Valves (Danfoss)	ETS 12C
Condenser Fans (Kemao)	10000107009
Fan Motors (Kemao)	KM12.001753
Control Panel (Carel)	P+5DKSEB060M0, PGB07DK0DIRB0
Control Panel (Compulab)	IOTG-IMX8-D2-NA16-XL-TIC
Control Panel (Daikin)	334980254
Control Panel (Siemens)	3RV2021-1EA10
Transformer (Hammond Power Solutions)	#243308

SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

UUT 2

Test Report# TR241403-01-R1

Manufacturer: Daikin Applied
Model Line: Trailblazer AGZ-F
Model Number: AGZ014FVVVNUUUN
Serial Number: N/A

Highest Passed Test Level

S _{DS}	z/h	I _p	A _{flx-h}	A _{rig-h}	A _{flx-v}	A _{rig-v}
2.00	1	1.5	3.2	2.4	1.47	0.59
2.20	0					

Dimensions/Weights

Depth (in)	Width (in)	Height (in)	Weight (lbs.)
297.8	88	98.6	10,255

Lowest Natural Frequency (Hz)

Front-Back	Side-Side	Vertical
3.2	2.3	5.0

Building Codes

CBC 2022

Test Criteria

ICC-ES AC156

Construction/Option Summary

Carbon Steel

UUT Mounting Details:



UUT was based mounted isolated with (10) 3/4" Gr. 8 bolts to (10) Daikin MSSH-1E Spring Isolators. Each was welded to shake table fixture with (2) 2-1/2" long 1/4" fillet welds each short side.

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	Model Number
Scroll Compressor (Danfoss)	DSF485A4ABA, DSF530A4ABA
Condenser Coils (Sanhua)	101000150
Evaporator (Alfa-Laval)	ACH1000-DQ-182
Expansion Valves (Danfoss)	ETS 100C
Condenser Fans (Kemao)	10000107009
Fan Motors (Kemao)	KM12.001754
Fan Motors (Century)	P56AA47E19
Control Panel (Carel)	P+5DKSEB060M0, PGB07DK0DIRB0
Control Panel (Compulab)	IOTG-IMX8-D2-NA16-XL-TIC
Control Panel (Compulab)	IOTG-IMX8-D2-NA16-XL-TIC
Control Panel (Daikin)	334980254
Control Panel (Siemens)	3RV2021-1EA10
Transformer (Hammond Power Solutions)	C1F1C5LES, #243307+A24:AH52