APPLICATION FOR OSHPD SPECIAL SEISMIC CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY	
APPLICATION #:	OSP – 0125 – 10

OSHPD Special Seismic Certification Preapproval (OSP)

Type: ☐ New ☒ Renewal

Manufacturer Information

Manufacturer: Carrier Corporation

Manufacturer's Technical Representative: Jeremy Babb

Mailing Address: 7310 West Morris St., Indianapolis, IN 46206

Telephone: 678.981.4995 Email: Jeremy.Babb@carrier.utc.com

Product Information

Product Name: Ductless Split Air Conditioning Systems

Product Type: Air Conditioning Units

Product Model Number: AHA/HHA/MK/RAV/MAQ/MBR/MGR/MMYH/MMYF
(List all unique product identification numbers and/or part numbers)

General Description: Indoor/Outdoor Split Air Conditioning Units. Seismic enhancements made to the test units and modifications required to address the anomalies observed during the tests shall be incorporated into the production units.

Mounting Description: Floor, wall, and ceiling rigid mounted.

Applicant Information

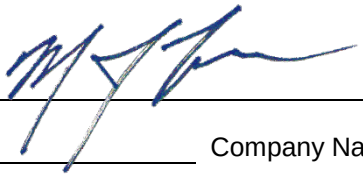
Applicant Company Name: TRU Compliance, LLC

Contact Person: Matthew J. Tobolski, S.E.

Mailing Address: 960 SW Disk Dr., Suite 104, Bend, OR 97702

Telephone: 844.878.0200 Email: mtobolski@trucompliance.com

I hereby agree to reimburse the Office of Statewide Health Planning and Development review fees in accordance with the California Administrative Code, 2016.

Signature of Applicant:  Date: 2/2/2017

Title: President & CEO Company Name: TRU Compliance, LLC

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

Company Name: TRU Compliance, LLC

Name: Andrew M. Coughlin, S.E. California License Number: S6082

Mailing Address: 960 SW Disk Dr., Suite 104, Bend, OR 97702

Telephone: 844.878.0200 Email: acoughlin@trucompliance.com

Supports and Attachments Preapproval

☐ Supports and attachments are preapproved under OPM- _____
(Separate application for OSHPD Preapproval of Manufacturer's Certification (OPM) of Supports and attachments is required)

☒ Supports and attachments are not preapproved

Certification Method

☒ Testing in accordance with: ☒ ICC-ES AC156

☐ Other (Please Specify): _____

Testing Laboratory

Company Name: Pacific Earthquake Engineering and Research Center (PEER)

Contact Name: Clement B. Barthes

Mailing Address: 1301 South 46th St., Bldg. 420, Richmond, CA 94804

Telephone: 510.642.3437 Email: peer_center@berkeley.edu

Seismic Parameters

Design in accordance with ASCE 7-10 Chapter 13: ☒ Yes ☐ No

Design Basis of Equipment or Components (F_p/W_p) = 1.5 (S_{DS} = 2.0); 1.125 (S_{DS} = 2.5)

S_{DS} (Design spectral response acceleration at short period, g) = 2.00 (z/h = 1.0); 2.50 (z/h = 0.0)

a_p (In-structure equipment or component amplification factor) = 2.5

R_p (Equipment or component response modification factor) = 6.0

Ω_0 (System overstrength factor) = 2.0

I_p (Importance factor) = 1.5

z/h (Height factor ratio) = 1.0 (S_{DS} = 2.0g); 0.0 (S_{DS} = 2.5g)

Equipment or Component Natural Frequencies (Hz) = See Attachment

Overall dimensions and weight (or range thereof) = See Attachment

Equipment or Components @ grade designed in accordance with ASCE 7-10 Chapter 15: ☐ Yes ☒ No

Design Basis of Equipment or Components (V/W) = _____

S_{DS} (Design spectral response acceleration at short period, g) = _____

S_{D1} (Design spectral response acceleration at 1 second period, g) = _____

R (Response modification coefficient) = _____

Ω_0 (System overstrength factor) = _____

C_d (Deflection amplification factor) = _____

I_p (Importance factor) = 1.5

Height to Center of Gravity above base = _____

Equipment or Component Natural Frequencies (Hz) = _____

Overall dimensions and weight (or range thereof) = _____

Tank(s) designed in accordance with ASME BPVC, 2015: ☐ Yes ☒ No

List of Attachments Supporting Special Seismic Certification

☒ Test Report(s) ☐ Drawings ☐ Calculations ☒ Manufacturer's Catalog

☒ Other(s) (Please Specify): Attachment

OSHPD Approval (For Office Use Only) – Approval Expires on December 31, 2022

Signature: _____ Date: April 21, 2017

Print Name: Timothy J. Piland Title: SSE

Special Seismic Certification Valid Up to : S_{DS} (g) = See Above z/h = See Above

Condition of Approval (if applicable): _____

SPECIAL SEISMIC CERTIFICATION
CERTIFIED COMPONENT MATRIX

TRU PROJECT NO. 16043

TRU COMPLIANCE

Manufacturer: Carrier Corporation
Model Line: AHA/HHA/MK/RAV/MAQ/MBR/MGR/MMYH/MMYF Outdoor Units

TABLE 1

Certified Product Construction Summary:
Carbon steel cabinet construction

Certified Options Summary:
Last digit of Model Number defines voltage: 3 = 208/230V single phase; 5 = 208/230V three phase; 6 = 460V three phase
Outdoor units listed in this table have indoor companion units listed in Tables 2 and 3.

Mounting Configuration:
Base mounted - rigid
Note: Installed mounting configuration must be of similar configuration and equivalent strength and stiffness to those tested.

Building Code: CBC 2016 ***Seismic Certification Limits:*** S_{DS} = 2.0 g z/h=1.0 S_{DS} = 2.5 g z/h=0.0 I_P = 1.5

Model Line	Model	Dimensions (in)			Weight (lb)	Notes	UUT
		Depth	Width	Height			
AHA (Cooling Only)	24AHA-418-A003	14.6	36.9	31.1	146	1.5 ton-cooling only	1
	24AHA-424-A003	14.6	36.9	31.1	148	2 ton-cooling only	Interp.
	24AHA-430-A003	17.1	44.5	37.1	183	2.5 ton-cooling only	Interp.
	24AHA-436-A003	17.1	44.5	37.1	184	3 ton-cooling only	Interp.
	24AHA-436-A005	17.1	44.5	37.1	184	3 ton-cooling only	Interp.
	24AHA-436-A006	17.1	44.5	37.1	184	3 ton-cooling only	Interp.
	24AHA-448-A003	17.1	44.5	37.1	213	4 ton-cooling only	Interp.
	24AHA-448-A005	17.1	44.5	37.1	213	4 ton-cooling only	Interp.
	24AHA-448-A006	17.1	44.5	37.1	213	4 ton-cooling only	Interp.
	24AHA-460-A003	17.1	44.5	37.1	245	5 ton-cooling only	Interp.
	24AHA-460-A005	17.1	44.5	37.1	245	5 ton-cooling only	Interp.
	24AHA-460-A006	17.1	44.5	37.1	245	5 ton-cooling only	Interp.
HHA (Heat Pump)	25HHA-418-A003	14.6	36.9	25.1	150	1.5 ton-heating/cooling	Interp.
	25HHA-425-A003	14.6	36.9	31.1	161	2 ton-heating/cooling	Interp.
	25HHA-430-A003	17.1	44.5	37.1	196	2.5 ton-heating/cooling	Interp.
	25HHA-436-A003	17.1	44.5	37.1	197	3 ton-heating/cooling	Interp.
	25HHA-436-A005	17.1	44.5	37.1	197	3 ton-heating/cooling	Interp.
	25HHA-436-A006	17.1	44.5	37.1	197	3 ton-heating/cooling	Interp.
	25HHA-448-A003	17.1	44.5	43.1	246	4 ton-heating/cooling	Interp.
	25HHA-448-A005	17.1	44.5	43.1	246	4 ton-heating/cooling	Interp.
	25HHA-448-A006	17.1	44.5	43.1	246	4 ton-heating/cooling	Interp.
	25HHA-460-A003	17.1	44.5	43.1	258	5 ton-heating/cooling	Interp.
	25HHA-460-A005	17.1	44.5	43.1	258	5 ton-heating/cooling	Interp.
	25HHA-460-A006	17.1	44.5	43.1	258	5 ton-heating/cooling	2

SPECIAL SEISMIC CERTIFICATION
CERTIFIED COMPONENT MATRIX

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Mounting Configuration:
Base mounted - rigid
Note: Installed mounting configuration must be of similar configuration and equivalent strength and stiffness to those tested.

Building Code: CBC 2016 ***Seismic Certification Limits:*** S_{DS} = 2.0 g z/h=1.0 S_{DS} = 2.5 g z/h=0.0 I_P = 1.5

Model Line	Model	Dimensions (in)			Weight (lb)	Notes	UUT
		Depth	Width	Height			
RAV (Heat Pump)	RAV-SP180AT2	11.4	30.7	21.7	98	1.5 ton-heating/cooling	9
	RAV-SP240AT2	12.6	35.4	35	144.5	2 ton-heating/cooling	Interp.
	RAV-SP300AT2	12.6	35.4	52.8	211.5	2.5 ton-heating/cooling	Interp.
	RAV-SP360AT2	12.6	35.4	52.8	211.5	3 ton-heating/cooling	Interp.
	RAV-SP420AT2	12.6	35.4	52.8	211.5	3.5 ton-heating/cooling	10
MAQ (Heat Pump)	38MAQB09R-1	13.11	32.09	21.81	82.9	0.75 ton-heating/cooling	17
	38MAQB09R-3	13.11	32.09	21.81	91.5	0.75 ton-heating/cooling	Interp.
	38MAQB12R-1	13.11	32.09	21.81	82.9	1 ton-heating/cooling	Interp.
	38MAQB12R-3	13.11	32.09	21.81	91.5	1 ton-heating/cooling	Interp.
	38MAQB18R-3	14.17	33.66	27.63	118.2	1.5 ton-heating/cooling	Interp.
	38MAQB24R-3	16.14	37.24	31.89	145.5	2 ton-heating/cooling	Interp.
	38MAQB30R-3	16.14	37.24	31.89	139.8	2.5 ton-heating/cooling	Interp.
	38MAQB36R-3	16.14	37.24	31.89	147.3	3 ton-heating/cooling	18
MBR (Heat Pump)	38MBRQ36A-3	17.91	40.63	31.89	154	3 ton-heating/cooling	19
	38MBRQ48A-3	17.64	40.63	52.48	220	4 ton-heating/cooling	20
MGR (Heat Pump)	38MGRQ18B-3	14.82	37.31	27.64	105.8	1.5 ton-heating/cooling	21
	38MGRQ24C-3	17.91	41.22	31.88	149.9	2 ton-heating/cooling	Interp.
	38MGRQ30D-3	17.91	41.22	31.88	156.5	2.5 ton-heating/cooling	Interp.
	38MGRQ36D-3	17.63	41.15	52.48	221.6	3 ton-heating/cooling	Interp.
	38MGRQ48E-3	17.63	41.15	52.48	223.8	4 ton-heating/cooling	22

SPECIAL SEISMIC CERTIFICATION
CERTIFIED COMPONENT MATRIX

TRU PROJECT NO. 16043

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Manufacturer: Carrier Corporation
Model Line: AHA/HHA/MK/RAV/MAQ/MBR/MGR/MMYH/MMYF Outdoor Units

TABLE 1

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Carbon steel cabinet construction

Certified Options Summary:
Last digit of Model Number defines voltage: 3 = 208/230V single phase; 5 = 208/230V three phase; 6 = 460V three phase
Outdoor units listed in this table have indoor companion units listed in Tables 2 and 3.

Mounting Configuration:
Base mounted - rigid
Note: Installed mounting configuration must be of similar configuration and equivalent strength and stiffness to those tested.

Building Code: CBC 2016 ***Seismic Certification Limits:*** S_{DS} = 2.0 g z/h=1.0 S_{DS} = 2.5 g z/h=0.0 I_P = 1.5

Model Line	Model	Dimensions (in)			Weight (lb)	Notes	UUT
		Depth	Width	Height			
MMYH Heat Pump 208/230V-3-60	MMY-MAP0726HT9P	30.7	39	72.9	574	6 ton-heating/cooling	31
	MMY-MAP0966HT9P	30.7	47.6	72.9	684	8 ton-heating/cooling	Interp.
	MMY-MAP1206HT9P	30.7	47.6	72.9	684	10 ton-heating/cooling	Interp.
	MMY-MAP1446HT9P	30.7	63	72.9	838	12 ton-heating/cooling	Interp.
	MMY-MAP1686HT9P	30.7	63	72.9	838	14 ton-heating/cooling	Interp.
MMYH - Combo Heat Pump 208/230V-3-60	MMY-AP1926HT9P	30.7	95.2	72.9	1368	2X 0966HT9P	Interp.
	MMY-AP2166HT9P	30.7	95.2	72.9	1368	1206HT9P + 0966HT9P	Interp.
	MMY-AP2406HT9P	30.7	110.6	72.9	1522	1446HT9P + 0966HT9P	Interp.
	MMY-AP2646HT9P	30.7	110.6	72.9	1522	1446HT9P + 1206HT9P	Interp.
	MMY-AP2886HT9P	30.7	126	72.9	1676	2X 1446HT9P	Interp.
	MMY-AP3126HT9P	30.7	126	72.9	1676	1686HT9P + 1446HT9P	Interp.
	MMY-AP3366HT9P	30.7	126	72.9	1676	2X 1686HT9P	Interp.
	MMY-AP3606HT9P	30.7	142.8	72.9	2052	3X 1206HT9	Interp.
	MMY-AP3846HT9P	30.7	158.2	72.9	2206	1446HT9P + 2X 1206HT9P	Interp.
	MMY-AP4086HT9P	30.7	173.6	72.9	2360	2X 1446HT9P + 1206HT9P	Interp.
	MMY-AP4326HT9P	30.7	189	72.9	2360	1686HT9P+ 1446HT9P + 1206H	Interp.
	MMY-AP4566HT9P	30.7	189	72.9	2360	2X 16866HT9P + 1206HT9P	Interp.
MMYH - Combo Heat Pump 208/230V-3-60 Space Saving	MMY-AP192S6HT9P	30.7	89.6	72.9	1258	1206HT9P + 0726HT9P	Interp.
	MMY-AP240S6HT9P	30.7	95.2	72.9	1368	2X 1206HT9P	Interp.
	MMY-AP288S6HT9P	30.7	110.6	72.9	1522	1686HT9P +1206HT9P	Interp.
	MMY-AP408S6HT9P	30.7	158.2	72.9	2206	16866HT9P + 2X 1206HT9P	Interp.

SPECIAL SEISMIC CERTIFICATION
CERTIFIED COMPONENT MATRIX

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Building Code: CBC 2016 ***Seismic Certification Limits:*** S_{DS} = 2.0 g z/h=1.0 S_{DS} = 2.5 g z/h=0.0 I_P = 1.5

Model Line	Model	Dimensions (in)			Weight (lb)	Notes	UUT
		Depth	Width	Height			
MMYH Heat Pump 480V-3-60	MMY-MAP0726HT6P	30.7	39	72.9	574	6 ton-heating/cooling	Interp.
	MMY-MAP0966HT6P	30.7	47.6	72.9	684	8 ton-heating/cooling	Interp.
	MMY-MAP1206HT6P	30.7	47.6	72.9	684	10 ton-heating/cooling	Interp.
	MMY-MAP1446HT6P	30.7	63	72.9	838	12 ton-heating/cooling	Interp.
	MMY-MAP1686HT6P	30.7	63	72.9	838	14 ton-heating/cooling	Interp.
MMYH - Combo Heat Pump 480V-3-60	MMY-AP1926HT6P	30.7	95.2	72.9	1368	2X 0966HT6P	Interp.
	MMY-AP2166HT6P	30.7	95.2	72.9	1368	1206HT6P + 0966HT6P	Interp.
	MMY-AP2406HT6P	30.7	110.6	72.9	1522	1446HT6P + 0966HT6P	Interp.
	MMY-AP2646HT6P	30.7	110.6	72.9	1522	1446HT6P + 1206HT6P	Interp.
	MMY-AP2886HT6P	30.7	126	72.9	1676	2X 1446HT6P	Interp.
	MMY-AP3126HT6P	30.7	126	72.9	1676	1686HT6P + 1446HT6P	Interp.
	MMY-AP3366HT6P	30.7	126	72.9	1676	2X 1686HT6P	Interp.
	MMY-AP3606HT6P	30.7	142.8	72.9	2052	3X 1206HT6	Interp.
	MMY-AP3846HT6P	30.7	158.2	72.9	2206	1446HT6P + 2X 1206HT6P	Interp.
	MMY-AP4086HT6P	30.7	173.6	72.9	2360	2X 1446HT6P + 1206HT6P	Interp.
	MMY-AP4326HT6P	30.7	189	72.9	2360	1686HT6P+ 1446HT6P + 1206H	Interp.
	MMY-AP4566HT6P	30.7	189	72.9	2360	2X 16866HT6P + 1206HT6P	Interp.
MMYH - Combo Heat Pump 480V-3-60 Space Saving	MMY-AP192S6HT6P	30.7	89.6	72.9	1258	1206HT6P + 0726HT6P	Interp.
	MMY-AP240S6HT6P	30.7	95.2	72.9	1368	2X 1206HT6P	Interp.
	MMY-AP288S6HT6P	30.7	110.6	72.9	1522	1686HT6P +1206HT6P	Interp.
	MMY-AP408S6HT6P	30.7	158.2	72.9	2206	16866HT6P + 2X 1206HT6P	Interp.

SPECIAL SEISMIC CERTIFICATION
CERTIFIED COMPONENT MATRIX

TRU PROJECT NO. 16043

TRU COMPLIANCE

Manufacturer: Carrier Corporation
Model Line: AHA/HHA/MK/RAV/MAQ/MBR/MGR/MMYH/MMYF Outdoor Units

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Building Code: CBC 2016 ***Seismic Certification Limits:*** S_{DS} = 2.0 g z/h=1.0 S_{DS} = 2.5 g z/h=0.0 I_P = 1.5

Model Line	Model	Dimensions (in)			Weight (lb)	Notes	UUT
		Depth	Width	Height			
MMYF/ MMYF Combo Heat Recovery 208/230V-1-60	MMY-MAP0726FT2P	30.7	39	72.9	600	6 ton-heating/cooling	Interp.
	MMY-AP1446FT2PUL	30.7	78	72.9	1200	2X 0726FT2P	Interp.
MMYF Heat Recovery 208/230V-3-60	MMY-MAP0726FT9P	30.7	39	72.9	600	6 ton-heating/cooling	Interp.
	MMY-MAP0966FT9P	30.7	47.6	72.9	721	8 ton-heating/cooling	Interp.
	MMY-MAP1206FT9P	30.7	47.6	72.9	721	10 ton-heating/cooling	Interp.
	MMY-MAP1446FT9P	30.7	63	72.9	882	12 ton-heating/cooling	Interp.
	MMY-MAP1686FT9P	30.7	63	72.9	882	14 ton-heating/cooling	Interp.
MMYF - Combo Heat Recovery 208/230V-3-60	MMY-AP1926FT9P	30.7	95.2	72.9	1442	2X 0966FT9P	Interp.
	MMY-AP2166FT9P	30.7	95.2	72.9	1442	1206FT9P+ 0966FT9P	Interp.
	MMY-AP2406FT9P	30.7	110.6	72.9	1603	1446FT9P + 0966FT9P	Interp.
	MMY-AP2646FT9P	30.7	110.6	72.9	1603	1446FT9P + 1206FT9P	Interp.
	MMY-AP2886FT9P	30.7	126	72.9	1764	2X 1446FT9P	Interp.
	MMY-AP3126FT9P	30.7	126	72.9	1764	1686FT9P + 1446FT9P	Interp.
	MMY-AP3366FT9P	30.7	142.8	72.9	2163	2X 1206FT6P + 0966FT6P	Interp.
	MMY-AP3606FT9P	30.7	142.8	72.9	2163	3X 1206FT6P	Interp.
	MMY-AP3846FT9P	30.7	158.2	72.9	2324	1446FT6P + 2X 1206FT6P	Interp.
	MMY-AP4086FT9P	30.7	173.6	72.9	2485	2X 1446FT6P + 1206FT6P	Interp.
	MMY-AP4326FT9P	30.7	189	72.9	2646	1686FT6P+ 1446FT6P + 1206FT	Interp.
	MMY-AP4566FT9P	30.7	189	72.9	2646	2X 16866FT6P + 1206FT6P	Interp.
MMYF - Combo Heat Recovery 208/230V-3-60 Space Saving	MMY-AP192S6FT9P	30.7	89.6	72.9	1321	12066FT9P + 0726FT9P	Interp.
	MMY-AP240S6FT9P	30.7	95.2	72.9	1442	2X 1206FT9P	Interp.
	MMY-AP288S6FT9P	30.7	110.6	72.9	1603	1686FT9P +1206FT9P	Interp.
	MMY-AP336S6FT9P	30.7	126	72.9	1764	2X 16866FT9P	Interp.

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Model Line	Model	Dimensions (in)			Weight (lb)	Notes	UUT
		Depth	Width	Height			
MMYF Heat Recovery 460V-3-60	MMY-MAP0726FT6P	30.7	39	72.9	615	6 ton-heating/cooling	Interp.
	MMY-MAP0966FT6P	30.7	47.6	72.9	736	8 ton-heating/cooling	Interp.
	MMY-MAP1206FT6P	30.7	47.6	72.9	736	10 ton-heating/cooling	Interp.
	MMY-MAP1446FT6P	30.7	63	72.9	875	12 ton-heating/cooling	Interp.
	MMY-MAP1686FT6P	30.7	63	72.9	875	14 ton-heating/cooling	32
MMYF - Combo Heat Recovery 480V-3-60	MMY-AP1926FT6P	30.7	95.2	72.9	1472	2X 0966FT6P	Interp.
	MMY-AP2166FT6P	30.7	95.2	72.9	1472	1206FT6P+ 0966FT6P	Interp.
	MMY-AP2406FT6P	30.7	110.6	72.9	1611	1446FT6P + 0966FT6P	Interp.
	MMY-AP2646FT6P	30.7	110.6	72.9	1611	1446FT6P + 1206FT6P	Interp.
	MMY-AP2886FT6P	30.7	126	72.9	1750	2X 1446FT6P	Interp.
	MMY-AP3126FT6P	30.7	126	72.9	1750	1686FT6P + 1446FT6P	Interp.
	MMY-AP3366FT6P	30.7	142.8	72.9	2208	2X 1206FT6P + 0966FT6P	Interp.
	MMY-AP3606FT6P	30.7	142.8	72.9	2208	3X 1206FT6P	Interp.
	MMY-AP3846FT6P	30.7	158.2	72.9	2347	1446FT6P + 2X 1206FT6P	Interp.
	MMY-AP4086FT6P	30.7	173.6	72.9	2486	2X 1446FT6P + 1206FT6P	Interp.
	MMY-AP4326FT6P	30.7	189	72.9	2625	1686FT6P+ 1446FT6P + 1206FT	Interp.
	MMY-AP4566FT6P	30.7	189	72.9	2625	2X 16866FT6P + 1206FT6P	Interp.
MMYF - Combo Heat Recovery 480V-3-60 Space Saving	MMY-AP192S6FT6P	30.7	89.6	72.9	1351	12066FT6P + 0726FT6P	Interp.
	MMY-AP240S6FT6P	30.7	95.2	72.9	1472	2X 1206FT6P	Interp.
	MMY-AP288S6FT6P	30.7	110.6	72.9	1611	1686FT6P +1206FT6P	Interp.
	MMY-AP336S6FT6P	30.7	126	72.9	1750	2X 16866HT6P	Interp.

SPECIAL SEISMIC CERTIFICATION
CERTIFIED COMPONENT MATRIX

TRU PROJECT NO. 16043

TRU COMPLIANCE

Manufacturer: Carrier Corporation
Model Line: AHA/HHA/MK/RAV/MAQ/MBR/MGR/MMYH/MMYF Indoor Wall Units

TABLE 2

Certified Product Construction Summary:
Carbon steel frame with plastic cover

Certified Options Summary:
208/230V Single Phase

Mounting Configuration:
Wall Mounted - Rigid
Note: Installed mounting configuration must be of similar configuration and equivalent strength and stiffness to those tested.

Building Code: CBC 2016 ***Seismic Certification Limits:*** S_{DS} = 2.0 g z/h=1.0 S_{DS} = 2.5 g z/h=0.0 I_P = 1.5

Model Line	Model	Dimensions (in)			Weight (lb)	Notes	UUT
		Depth	Width	Height			
MK (High Wall)	40MKCB18B-3	10.2	46.7	13.4	37.5	1-1/2 Ton cooling only	3
	40MKCB22B-3	10.2	46.7	13.4	37.5	1-5/6 Ton cooling only	Interp.
	40MKCB28B-3	10.4	57.1	13.4	55.1	2-1/3 Ton cooling only	Interp.
	40MKCB32B-3	10.4	57.1	13.4	55.1	2-2/3 Ton cooling only	Interp.
	40MKQB24B-3	10.4	57.1	13.4	55.1	2 Ton heating/cooling	Interp.
	40MKQB28B-3	10.4	57.1	13.4	55.1	2-1/3 Ton heating/cooling	4
MK (Low Wall)	40MKCB18F-3	9.3	42	26.6	59.7	1.4 Ton cooling only	5
	40MKCB34F-3	9.3	65	26.6	91.9	2.8 Ton cooling only	Interp.
	40MKCB54F-3	9.3	65	26.6	98.8	3.8 Ton cooling only	Interp.
	40MKQB36F-3	9.3	65	26.6	98.8	2.9 Ton heating/cooling	Interp.
	40MKQB48F-3	9.3	65	26.6	98.8	3.9 Ton heating/cooling	6
RAV (High Wall)	RAV-SP180KRT-UL	9	41.3	12.6	36	1.5 Ton heating/cooling	15
	RAV-SP240KRT-UL	9	41.3	12.6	36	2 Ton heating/cooling	16
MAQ (High Wall)	40MAQB09B-1	7.8	32.87	11.02	19.18	3/4 Ton heating/cooling	Extrap.
	40MAQB12B-3	7.8	32.87	11.02	19.18	1 Ton heating/cooling	23
	40MAQB12B-1	7.8	32.87	11.02	19.18	1 Ton heating/cooling	Interp.
	40MAQB12B-3	7.8	32.87	11.02	19.18	1 Ton heating/cooling	Interp.
	40MAQB18B-3	8.58	38.98	12.4	26.46	1-1/2 Ton heating/cooling	Interp.
	40MAQB24B-3	10.16	46.69	13.39	40.12	2 Ton heating/cooling	Interp.
	40MAQB30B-3	10.16	46.69	13.39	40.12	2-1/2 Ton heating/cooling	Interp.
	40MAQB36B-3	10.16	46.69	13.39	40.12	3 Ton heating/cooling	24
MBQ (Low Wall)	40MBQB09F-3	23.6	27.6	8.3	32.4	3/4 Ton heating/cooling	29
	40MBQB12F-3	23.6	27.6	8.3	32.4	1 Ton heating/cooling	30

SPECIAL SEISMIC CERTIFICATION
CERTIFIED COMPONENT MATRIX

TRU PROJECT NO. 16043

TRU COMPLIANCE

Manufacturer: Carrier Corporation
Model Line: AHA/HHA/MK/RAV/MAQ/MBR/MGR/MMYH/MMYF Indoor Wall Units

TABLE 2

Certified Product Construction Summary:
Carbon steel frame with plastic cover

Certified Options Summary:
208/230V Single Phase

Mounting Configuration:
Wall Mounted - Rigid
Note: Installed mounting configuration must be of similar configuration and equivalent strength and stiffness to those tested.

Building Code: CBC 2016 ***Seismic Certification Limits:*** S_{DS} = 2.0 g z/h=1.0; S_{DS} = 2.5 g z/h=0.0 I_P = 1.5

Model Line	Model	Dimensions (in)			Weight (lb)	Notes	UUT
		Depth	Width	Height			
MMK (High Wall)	MMK-AP0073H2UL	9	41.3	12.6	33	0.58 Ton heating/cooling	33
	MMK-AP0093H2UL	9	41.3	12.6	33	3/4 Ton heating/cooling	Interp.
	MMK-AP0123H2UL	9	41.3	12.6	33	1 Ton heating/cooling	Interp.
	MMK-AP0153H2UL	9	41.3	12.6	33	1-1/4 Ton heating/cooling	Interp.
	MMK-AP0183H2UL	9	41.3	12.6	33	1-1/2 Ton heating/cooling	Interp.
	MMK-AP0243H2UL	9	41.3	12.6	33	2 Ton heating/cooling	34

SPECIAL SEISMIC CERTIFICATION
CERTIFIED COMPONENT MATRIX

TRU PROJECT NO. 16043

TABLE 3

Manufacturer: Carrier Corporation
Model Line: AHA/HHA/MK/RAV/MAQ/MBR/MGR/MMYH/MMYF Indoor Ceiling Units

Certified Product Construction Summary:
Carbon steel frame with plastic or carbon steel cover

Certified Options Summary:
208/230V Single Phase

Mounting Configuration:
Ceiling Suspended/Mounted - Rigid
Note: Installed mounting configuration must be of similar configuration and equivalent strength and stiffness to those tested.

Building Code: CBC 2016 ***Seismic Certification Limits:*** S_{DS} = 2.0 g z/h=1.0 S_{DS} = 2.5 g z/h=0.0 I_P = 1.5

Model Line	Model	Dimensions (in)			Weight (lb)	Notes	UUT
		Depth	Width	Height			
MK (Underceiling)	40MKCB18F-3[1]	9.3	42	26.6	59.7	1.4 Ton cooling only	7
	40MKCB34F-3[1]	9.3	65	26.6	91.9	2.8 Ton cooling only	Interp.
	40MKCB54F-3[1]	9.3	65	26.6	98.8	3.8 Ton cooling only	Interp.
	40MKQB36F-3[1]	9.3	65	26.6	98.8	2.9 Ton heating/cooling	Interp.
	40MKQB48F-3[1]	9.3	65	26.6	98.8	3.9 Ton heating/cooling	8
RAV (Underceiling)	RAV-SP180UT-UL	33.1	33.1	10.1	44	1.5 Ton heating/cooling	13
	RAV-SP240UT-UL	33.1	33.1	10.1	44	2 Ton heating/cooling	Interp.
	RAV-SP300UT-UL	33.1	33.1	12.6	53	2.5 Ton heating/cooling	Interp.
	RAV-SP360UT-UL	33.1	33.1	12.6	53	3 Ton heating/cooling	Interp.
	RAV-SP420UT-UL	33.1	33.1	12.6	53	3.5 Ton heating/cooling	14
RAV (Four Way Cassette)	RAV-SP180CT-UL[3]	26.8	35.8	8.3	46	1.5 Ton heating/cooling	11
	RAV-SP240CT-UL[3]	26.8	46.5	8.3	55	2 Ton heating/cooling	Interp.
	RAV-SP300CT-UL[3]	26.8	62.8	8.3	73	2.5 Ton heating/cooling	Interp.
	RAV-SP360CT-UL[3]	26.8	62.8	8.3	73	3 Ton heating/cooling	Interp.
	RAV-SP420CT-UL[3]	26.8	62.8	8.3	73	3.5 Ton heating/cooling	12
MBQ (Duct System)	40MBQB09D-3[1]	25	27.56	8.27	77.2	0.75 Ton heating/cooling	25
	40MBQB12D-3[1]	25	27.56	8.27	99.2	1 Ton heating/cooling	Interp.
	40MBQB18D-3[1]	25	36.22	8.27	77.2	1.5 Ton heating/cooling	Interp.
	40MBQB24D-3[1]	25	36.22	10.63	99.2	2 Ton heating/cooling	26
	40MBQB36D-3[2]	30.51	44.88	10.63	77.2	3 Ton heating/cooling	41
	40MBQB48D-3[2]	34.06	47.24	11.81	99.2	4 Ton heating/cooling	42

[1]Requires seismic enhancements: (6) #10 self-tapping screws in each mounting bracket (24 total)
[2]Requires seismic enhancements: (4) #10 self-tapping screws in each mounting bracket (16 total)
[3]Requires seismic enhancements: (4) #10 washers at bolt head connecting support bracket to plastic cover (4 total)

SPECIAL SEISMIC CERTIFICATION
CERTIFIED COMPONENT MATRIX

TRU PROJECT NO. 16043

TRU COMPLIANCE

Manufacturer: Carrier Corporation
Model Line: AHA/HHA/MK/RAV/MAQ/MBR/MGR/MMYH/MMYF Indoor Ceiling Units

TABLE 3

Certified Product Construction Summary:
Carbon steel frame with plastic or carbon steel cover

Certified Options Summary:
208/230V Single Phase

Mounting Configuration:
Ceiling Suspended/Mounted - Rigid
Note: Installed mounting configuration must be of similar configuration and equivalent strength and stiffness to those tested.

Building Code: CBC 2016 ***Seismic Certification Limits:*** S_{DS} = *2.0 g z/h=1.0* S_{DS} = *2.5 g z/h=0.0* I_P = *1.5*

Model Line	Model	Dimensions (in)			Weight (lb)	Notes	UUT
		Depth	Width	Height			
MBQ (Four Way Cassette)	40MBQB09C-3	25.47	25.47	12.21	40.8	0.75 Ton heating/cooling	27
	40MBQB12C-3	25.47	25.47	12.21	40.8	1 Ton heating/cooling	Interp.
	40MBQB18C-3	25.47	25.47	12.21	45.2	1.5 Ton heating/cooling	28
MMC (Underceiling)	MMC- AP0181H2UL	26.8	35.8	8.3	46	1.5 Ton heating/cooling	35
	MMC- AP0241H2UL	26.8	46.5	8.3	57	2 Ton heating/cooling	Interp.
	MMC- AP0361H2UL	26.8	62.8	8.3	75	3 Ton heating/cooling	Interp.
	MMC- AP0421H2UL	26.8	62.8	8.3	75	3.5 Ton heating/cooling	36
MMD (Concealed Duct)	MMD-AP0074BH2UL	31.5	21.7	12.6	64	0.58 Ton heating/cooling	37
	MMD-AP0094BH2UL	31.5	21.7	12.6	64	0.75 Ton heating/cooling	Interp.
	MMD-AP0124BH2UL	31.5	21.7	12.6	64	1 Ton heating/cooling	Interp.
	MMD-AP0154BH2UL	31.5	39.4	12.6	93	1.25 Ton heating/cooling	Interp.
	MMD-AP0184BH2UL	31.5	39.4	12.6	93	1.5 Ton heating/cooling	Interp.
	MMD-AP0214BH2UL	31.5	53.2	12.6	119	1.75 Ton heating/cooling	Interp.
	MMD-AP0244BH2UL	31.5	53.2	12.6	119	2 Ton heating/cooling	Interp.
	MMD-AP0304BH2UL	31.5	53.2	12.6	119	2.5 Ton heating/cooling	Interp.
	MMD-AP0364BH2UL	31.5	53.2	12.6	119	3 Ton heating/cooling	Interp.
	MMD-AP0424BH2UL	31.5	53.2	12.6	119	3.5 Ton heating/cooling	Interp.
	MMD-AP0484BH2UL	31.5	53.2	12.6	119	4 Ton heating/cooling	38
RBM (Flow Slector Unit)	RBM-Y0383FUL	6.3	9.77	7.49	11	0 to 3 ton capacity	39
	RBM-Y0613FUL	6.3	9.77	7.49	13	3 to 5 ton capacity	Interp.
	RBM-Y0963FUL	7.88	15.8	7.88	20	5 to 8 ton capacity	40

UNIT UNDER TEST (UUT) SUMMARY SHEET

TRU PROJECT NO. 16043

Manufacturer: Carrier Corporation

Model Line: AHA/HHA/MK/RAV/MAQ/MBR/MGR/MMYH/MMYF

UUT	Unit Description	Report Number	Testing Laboratory	S_{DS}	z/h	I_P
1	AHA (Cooling Only)	16043-TR-001	Pacific Earthquake Engineering Research Center (PEER)	2.0 g	1	1.5
				2.5 g	0	
2	HHA (Heat Pump)	16043-TR-001	Pacific Earthquake Engineering Research Center (PEER)	2.0 g	1	1.5
				2.5 g	0	
3	MK (High Wall)	16043-TR-001	Pacific Earthquake Engineering Research Center (PEER)	2.0 g	1	1.5
				2.5 g	0	
4	MK (High Wall)	16043-TR-001	Pacific Earthquake Engineering Research Center (PEER)	2.0 g	1	1.5
				2.5 g	0	
5	MK (Low Wall)	16043-TR-001	Pacific Earthquake Engineering Research Center (PEER)	2.0 g	1	1.5
				2.5 g	0	
6	MK (Low Wall)	16043-TR-001	Pacific Earthquake Engineering Research Center (PEER)	2.0 g	1	1.5
				2.5 g	0	
7	MK[1] (Underceiling)	16043-TR-001	Pacific Earthquake Engineering Research Center (PEER)	2.0 g	1	1.5
				2.5 g	0	
8	MK[1] (Underceiling)	16043-TR-001	Pacific Earthquake Engineering Research Center (PEER)	2.0 g	1	1.5
				2.5 g	0	
9	RAV (Heat Pump)	16043-TR-001	Pacific Earthquake Engineering Research Center (PEER)	2.0 g	1	1.5
				2.5 g	0	
10	RAV (Heat Pump)	16043-TR-001	Pacific Earthquake Engineering Research Center (PEER)	2.0 g	1	1.5
				2.5 g	0	
11	RAV[2] (Four Way Cassette)	16043-TR-001	Pacific Earthquake Engineering Research Center (PEER)	2.0 g	1	1.5
				2.5 g	0	
12	RAV[2] (Four Way Cassette)	16043-TR-001	Pacific Earthquake Engineering Research Center (PEER)	2.0 g	1	1.5
				2.5 g	0	
13	RAV (Underceiling)	16043-TR-001	Pacific Earthquake Engineering Research Center (PEER)	2.0 g	1	1.5
				2.5 g	0	
14	RAV (Underceiling)	16043-TR-001	Pacific Earthquake Engineering Research Center (PEER)	2.0 g	1	1.5
				2.5 g	0	
15	RAV (High Wall)	16043-TR-001	Pacific Earthquake Engineering Research Center (PEER)	2.0 g	1	1.5
				2.5 g	0	
16	RAV (High Wall)	16043-TR-001	Pacific Earthquake Engineering Research Center (PEER)	2.0 g	1	1.5
				2.5 g	0	

Notes:

[1]Requires seismic enhancements: (6) #10 self-tapping screws in each mounting bracket (24 total)

[2]Requires seismic enhancements: (4) #10 washers at each bolt head connecting support bracket to plastic cover (4 total)

UNIT UNDER TEST (UUT) SUMMARY SHEET

TRU PROJECT NO. 16043

Manufacturer: Carrier Corporation

Model Line: AHA/HHA/MK/RAV/MAQ/MBR/MGR/MMYH/MMYF

UUT	Unit Description	Report Number	Testing Laboratory	S_{DS}	z/h	I_P
17	MAQ (Heat Pump)	16043-TR-002	Pacific Earthquake Engineering Research Center (PEER)	2.0 g	1	1.5
				2.5 g	0	
18	MAQ (Heat Pump)	16043-TR-002	Pacific Earthquake Engineering Research Center (PEER)	2.0 g	1	1.5
				2.5 g	0	
19	MBR (Heat Pump)	16043-TR-002	Pacific Earthquake Engineering Research Center (PEER)	2.0 g	1	1.5
				2.5 g	0	
20	MBR (Heat Pump)	16043-TR-002	Pacific Earthquake Engineering Research Center (PEER)	2.0 g	1	1.5
				2.5 g	0	
21	MGR (Heat Pump)	16043-TR-002	Pacific Earthquake Engineering Research Center (PEER)	2.0 g	1	1.5
				2.5 g	0	
22	MGR (Heat Pump)	16043-TR-002	Pacific Earthquake Engineering Research Center (PEER)	2.0 g	1	1.5
				2.5 g	0	
23	MAQ (High Wall)	16043-TR-002	Pacific Earthquake Engineering Research Center (PEER)	2.0 g	1	1.5
				2.5 g	0	
24	MAQ (High Wall)	16043-TR-002	Pacific Earthquake Engineering Research Center (PEER)	2.0 g	1	1.5
				2.5 g	0	
25	MBQ[1] (Duct System)	16043-TR-002	Pacific Earthquake Engineering Research Center (PEER)	2.0 g	1	1.5
				2.5 g	0	
26	MBQ[1] (Duct System)	16043-TR-002	Pacific Earthquake Engineering Research Center (PEER)	2.0 g	1	1.5
				2.5 g	0	
27	MBQ (Four Way Cassette)	16043-TR-002	Pacific Earthquake Engineering Research Center (PEER)	2.0 g	1	1.5
				2.5 g	0	
28	MBQ (Four Way Cassette)	16043-TR-002	Pacific Earthquake Engineering Research Center (PEER)	2.0 g	1	1.5
				2.5 g	0	
29	MBQ (Low Wall)	16043-TR-002	Pacific Earthquake Engineering Research Center (PEER)	2.0 g	1	1.5
				2.5 g	0	
30	MBQ (Low Wall)	16043-TR-002	Pacific Earthquake Engineering Research Center (PEER)	2.0 g	1	1.5
				2.5 g	0	
31	MMYH (Heat Pump 208/230V-3-60)	16043-TR-002	Pacific Earthquake Engineering Research Center (PEER)	2.0 g	1	1.5
				2.5 g	0	
32	MMYF (Heat Recovery 460V-3-60)	16043-TR-002	Pacific Earthquake Engineering Research Center (PEER)	2.0 g	1	1.5
				2.5 g	0	

Notes:

[1]Requires seismic enhancements: (6) #10 self-tapping screws in each mounting bracket (24 total)

UNIT UNDER TEST (UUT) SUMMARY SHEET

TRU PROJECT NO. 16043

Manufacturer: Carrier Corporation

Model Line: AHA/HHA/MK/RAV/MAQ/MBR/MGR/MMYH/MMYF

UUT	Unit Description	Report Number	Testing Laboratory	S_{DS}	z/h	I_P
33	MMK (High Wall)	16043-TR-002	Pacific Earthquake Engineering Research Center (PEER)	2.0 g	1	1.5
				2.5 g	0	
34	MMK (High Wall)	16043-TR-002	Pacific Earthquake Engineering Research Center (PEER)	2.0 g	1	1.5
				2.5 g	0	
35	MMC (Underceiling)	16043-TR-002	Pacific Earthquake Engineering Research Center (PEER)	2.0 g	1	1.5
				2.5 g	0	
36	MMC (Underceiling)	16043-TR-002	Pacific Earthquake Engineering Research Center (PEER)	2.0 g	1	1.5
				2.5 g	0	
37	MMD (Concealed Duct)	16043-TR-002	Pacific Earthquake Engineering Research Center (PEER)	2.0 g	1	1.5
				2.5 g	0	
38	MMD (Concealed Duct)	16043-TR-002	Pacific Earthquake Engineering Research Center (PEER)	2.0 g	1	1.5
				2.5 g	0	
39	RBM (Flow Slector Unit)	16043-TR-002	Pacific Earthquake Engineering Research Center (PEER)	2.0 g	1	1.5
				2.5 g	0	
40	RBM (Flow Slector Unit)	16043-TR-002	Pacific Earthquake Engineering Research Center (PEER)	2.0 g	1	1.5
				2.5 g	0	
41	MBQ[1] (Duct System)	16043-TR-002	Pacific Earthquake Engineering Research Center (PEER)	2.0 g	1	1.5
				2.5 g	0	
42	MBQ[1] (Duct System)	16043-TR-002	Pacific Earthquake Engineering Research Center (PEER)	2.0 g	1	1.5
				2.5 g	0	

Notes:

[1]Requires seismic enhancements: (4) #10 self-tapping screws in each mounting bracket (16 total)

UNIT UNDER TEST (UUT) SUMMARY SHEET

TRU PROJECT NO. 16043

UUT 1

Manufacturer:	Carrier Corporation		
Model Line:	24AHA/25HHA		
Model Number:	24AHA-418-A003	***Serial Number:***	3716X94714

Product Construction Summary:

Carbon steel housing

Options/Subcomponent Summary:

Cooling only, single phase 208/230V

UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
146	14.6	36.9	31.1	11.2	23.6	>33.3

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.0	1.0	1.5	3.2	2.4	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:

The UUT was rigid floor mounted using six (6) 3/8" Grade 8 Bolts.
Unit maintained structural integrity and remained functional per manufacturer requirement.
Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET

TRU PROJECT NO. 16043

UUT 2

Manufacturer:	Carrier Corporation		
Model Line:	24AHA/25HHA		
Model Number:	25HHA-460-A006	***Serial Number:***	3616X90140

Product Construction Summary:

Carbon steel housing

Options/Subcomponent Summary:

Heating and cooling, 3 phase 460V

UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
245	17.1	44.5	43.1	5.8	13.8	>33.3

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.0	1.0	1.5	3.2	2.4	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:

The UUT was rigid floor mounted using six (6) 3/8" Grade 8 Bolts.
Unit maintained structural integrity and remained functional per manufacturer requirement.
Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET

TRU PROJECT NO. 16043

UUT 3

Manufacturer:	Carrier Corporation		
Model Line:	40MK		
Model Number:	40MKCB18B-3	***Serial Number:***	2816V00518

Product Construction Summary:

Carbon steel internal frame; plastic outer cover

Options/Subcomponent Summary:

UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
37.5	10.2	46.7	13.4	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.0	1.0	1.5	3.2	2.4	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:

The UUT was rigid wall mounted using nineteen (19) #12 sheet metal screws.
Unit maintained structural integrity and remained functional per manufacturer requirement.
Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET

TRU PROJECT NO. 16043

UUT 4

Manufacturer:	Carrier Corporation		
Model Line:	40MK		
Model Number:	40MKQB28B-3	***Serial Number:***	2515V00550

Product Construction Summary:

Carbon steel internal frame; plastic outer cover

Options/Subcomponent Summary:

UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
55.1	10.4	57.1	13.4	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.0	1.0	1.5	3.2	2.4	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:

The UUT was rigid wall mounted using twenty two (22) #12 sheet metal screws.
Unit maintained structural integrity and remained functional per manufacturer requirement.
Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET

TRU PROJECT NO. 16043

UUT 5

Manufacturer:	Carrier Corporation		
Model Line:	40MK		
Model Number:	40MKCB18F-3	***Serial Number:***	4515V00035

Product Construction Summary:

Carbon steel internal frame; plastic outer cover

Options/Subcomponent Summary:

UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
59.7	42	9.3	26.6	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.0	1.0	1.5	3.2	2.4	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:

The UUT was rigid wall mounted using four (4) 3/8"A307 Thru bolts.
Unit maintained structural integrity and remained functional per manufacturer requirement.
Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET

TRU PROJECT NO. 16043

UUT 6

Manufacturer:	Carrier Corporation		
Model Line:	40MK		
Model Number:	40MKQB48F-3	***Serial Number:***	3015V00793

Product Construction Summary:

Carbon steel internal frame; plastic outer cover

Options/Subcomponent Summary:

UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
98.8	9.3	65	26.6	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.0	1.0	1.5	3.2	2.4	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:

The UUT was rigid wall mounted using four (4) 3/8"A307 Thru bolts.
Unit maintained structural integrity and remained functional per manufacturer requirement.
Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET

TRU PROJECT NO. 16043

UUT 7

Manufacturer:	Carrier Corporation		
Model Line:	40MK		
Model Number:	40MKCB18F-3	***Serial Number:***	4575V00034

Product Construction Summary:

Carbon steel internal frame; plastic outer cover

Options/Subcomponent Summary:

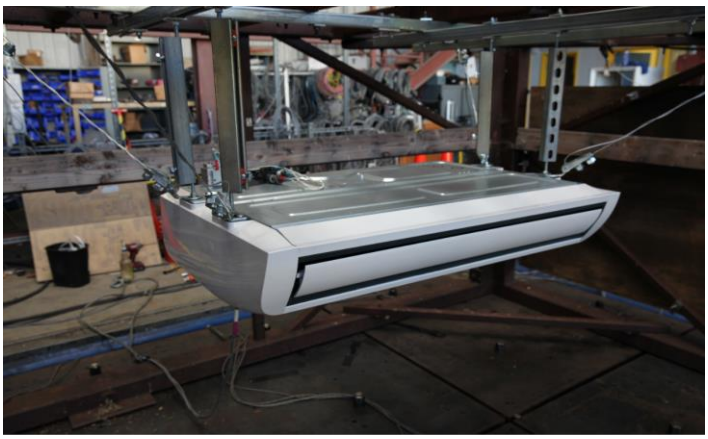
UUT Properties

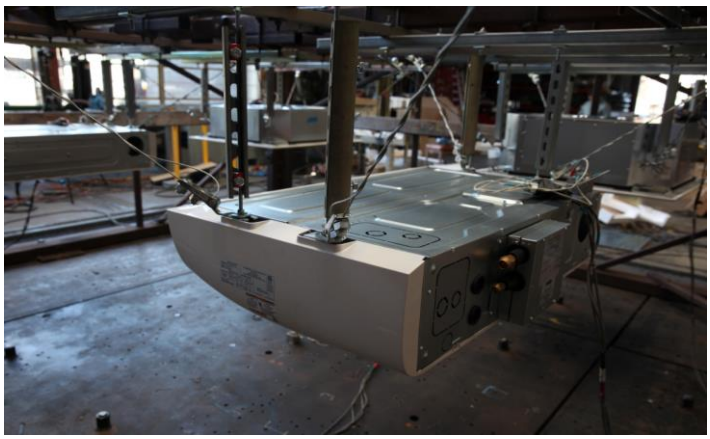
Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
59.7	42	26.6	9.3	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.0	1.0	1.5	3.2	2.4	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:





The UUT was ceiling suspended using four (4) 3/8" A36 hanger rods w/rod stiffeners & four (4) 1/8" cable braces w/Mason SCB-1/SCBH-1 clips at each end. The brackets were mounted to the unit using six (6) #10 self-tapping screws each.
Unit maintained structural integrity and remained functional per manufacturer requirement.
Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET

TRU PROJECT NO. 16043

UUT 8

Manufacturer:	Carrier Corporation		
Model Line:	40MK		
Model Number:	40MKQB48F-3	***Serial Number:***	3015V00793

Product Construction Summary:

Carbon steel internal frame; plastic outer cover

Options/Subcomponent Summary:

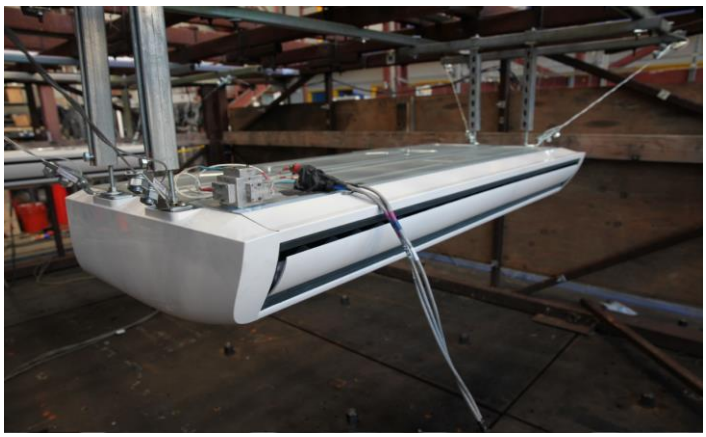
UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
98.8	26.6	65	9.3	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.0	1.0	1.5	3.2	2.4	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:



The UUT was ceiling suspended using four (4) 3/8" A36 hanger rods w/rod stiffeners & four (4) 1/8" cable braces w/Mason SCB-1/SCBH-1 clips at each end. The brackets were mounted to the unit using six (6) #10 self-tapping screws each.
Unit maintained structural integrity and remained functional per manufacturer requirement.
Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET

TRU PROJECT NO. 16043

UUT 9

Manufacturer:	Carrier Corporation		
Model Line:	RAV		
Model Number:	RAV-SP180AT2-UL	***Serial Number:***	60620057

Product Construction Summary:

Carbon steel housing

Options/Subcomponent Summary:

UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
98	11.4	30.7	21.7	17.2	21.1	>33.3

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.0	1.0	1.5	3.2	2.4	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:

The UUT was rigid floor mounted using four (4) 3/8" Grade 8 Bolts.
Unit maintained structural integrity and remained functional per manufacturer requirement.
Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET

TRU PROJECT NO. 16043

UUT 10

Manufacturer:	Carrier Corporation		
Model Line:	RAV		
Model Number:	RAV-SP420AT2-UL	***Serial Number:***	606B001

Product Construction Summary:

Carbon steel housing

Options/Subcomponent Summary:

UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
211.5	12.6	35.4	52.8	3.1	6.8	>33.3

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.0	1.0	1.5	3.2	2.4	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:

The UUT was rigid floor mounted using four (4) 1/2" Grade 8 Bolts.
Unit maintained structural integrity and remained functional per manufacturer requirement.
Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET

TRU PROJECT NO. 16043

UUT 11

Manufacturer:	Carrier Corporation		
Model Line:	RAV		
Model Number:	RAV-SP180UT-UL	***Serial Number:***	60370013

Product Construction Summary:

Carbon steel internal frame; plastic outer cover

Options/Subcomponent Summary:

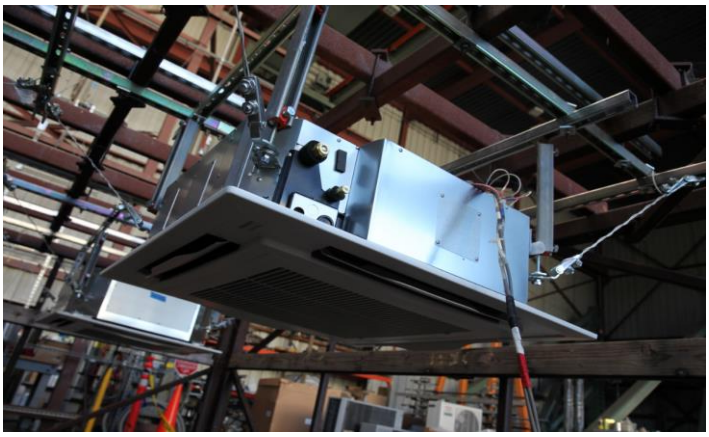
UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
44	33.1	33.1	10.1	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.0	1.0	1.5	3.2	2.4	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:



The UUT was ceiling suspended using four (4) 3/8" A36 hanger rods w/rod stiffeners & four (4) 1/8" cable braces w/Mason SCB-1/SCBH-1 clips at each end. Future installations will require (8) perpendicular cable braces minimum to restrain against torsion.
Unit maintained structural integrity and remained functional per manufacturer requirement.
Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET

TRU PROJECT NO. 16043

UUT 12

Manufacturer: Carrier Corporation
Model Line: RAV
Model Number: RAV-SP420UT-UL ***Serial Number:*** 60670004

Product Construction Summary:
Carbon steel internal frame; plastic outer cover

Options/Subcomponent Summary:

UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
53	33.1	33.1	12.6	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.0	1.0	1.5	3.2	2.4	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:

The UUT was ceiling suspended using four (4) 3/8" A36 hanger rods w/rod stiffeners & four (4) 1/8" cable braces w/Mason SCB-1/SCBH-1 clips at each end. Future installations will require (8) perpendicular cable braces minimum to restrain against torsion.
Unit maintained structural integrity and remained functional per manufacturer requirement.
Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET

TRU PROJECT NO. 16043

UUT 13

Manufacturer:	Carrier Corporation		
Model Line:	RAV		
Model Number:	RAV-SP180CT-UL	***Serial Number:***	50820030

Product Construction Summary:

Carbon steel internal frame; plastic outer cover

Options/Subcomponent Summary:

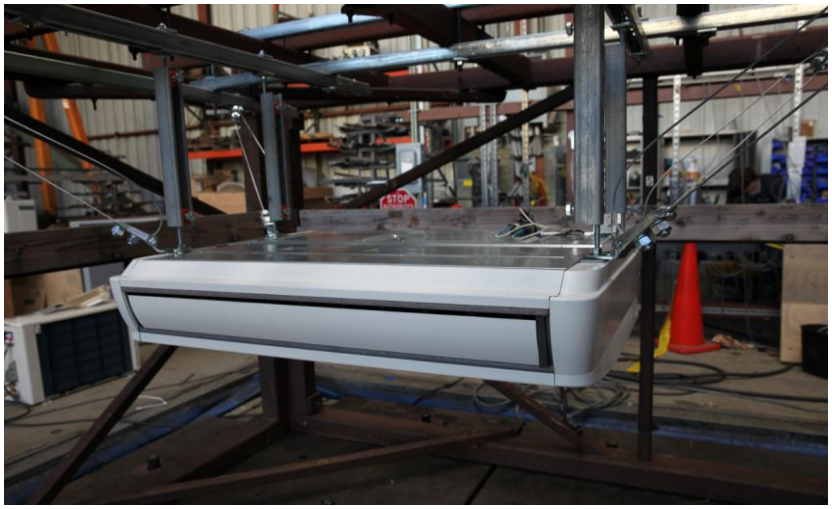
UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
46	26.8	35.8	8.3	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.0	1.0	1.5	3.2	2.4	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:



The UUT was ceiling hung using four (4) A36 hanger rods w/rod stiffeners and four (4) 1/8" cable braces w/ Mason SCB-1/SCBH-1 clips at each end.

Unit maintained structural integrity and remained functional per manufacturer requirement.

Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET

TRU PROJECT NO. 16043

UUT 14

Manufacturer: Carrier Corporation
Model Line: RAV
Model Number: RAV-SP420CT-UL ***Serial Number:*** 60420008

Product Construction Summary:
Carbon steel internal frame; plastic outer cover

Options/Subcomponent Summary:

UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
73	26.8	62.8	8.3	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.0	1.0	1.5	3.2	2.4	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:

The UUT was ceiling hung using four (4) A36 hanger rods w/rod stiffeners and four (4) 1/8" cable braces w/ Mason SCB-1/SCBH-1 clips at each end.
Unit maintained structural integrity and remained functional per manufacturer requirement.
Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET

TRU PROJECT NO. 16043

UUT 15

Manufacturer:	Carrier Corporation		
Model Line:	RAV		
Model Number:	RAV-SP180KRT-UL	***Serial Number:***	62600060

Product Construction Summary:

Carbon steel internal frame; plastic outer cover

Options/Subcomponent Summary:

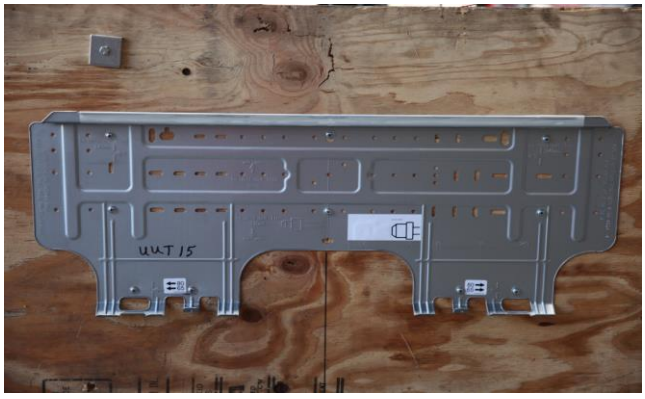
UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
31	9	41.3	12.6	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.0	1.0	1.5	3.2	2.4	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:



The UUT was rigid wall mounted using ten (10) #10 sheet metal screws.
Unit maintained structural integrity and remained functional per manufacturer requirement.
Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET

TRU PROJECT NO. 16043

UUT 16

Manufacturer: Carrier Corporation
Model Line: RAV
Model Number: RAV-SP240KRT-UL ***Serial Number:*** 62400016

Product Construction Summary:
Carbon steel internal frame; plastic outer cover

Options/Subcomponent Summary:

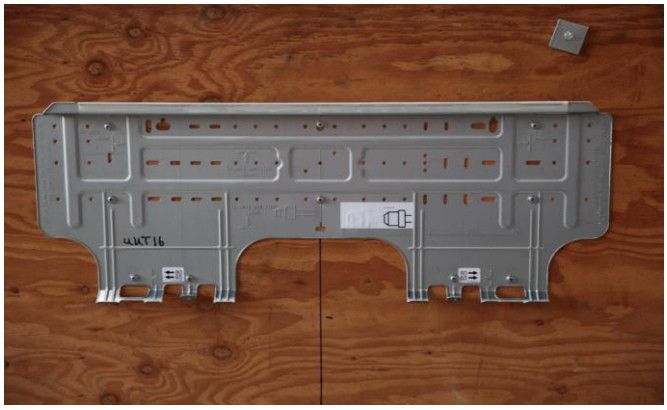
UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
31	9	41.3	12.6	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.0	1.0	1.5	3.2	2.4	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:



The UUT was rigid wall mounted using ten (10) #10 sheet metal screws.
Unit maintained structural integrity and remained functional per manufacturer requirement.
Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET

TRU PROJECT NO. 16043

UUT 17

Manufacturer:	Carrier Corporation		
Model Line:	38MAQ		
Model Number:	38MAQB09R - 1	***Serial Number:***	2016V15947

Product Construction Summary:

Carbon steel housing

Options/Subcomponent Summary:

UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
82.45	12.2	31.89	21.97	17.7	12.8	>33.3

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.0	1.0	1.5	3.2	2.4	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:

The UUT was rigid floor mounted using four (4) 3/8" lag screws with washers.
Unit maintained structural integrity and remained functional per manufacturer requirement.
Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET

TRU PROJECT NO. 16043

UUT 18

Manufacturer:	Carrier Corporation		
Model Line:	38MAQ		
Model Number:	38MAQB36R - 3	***Serial Number:***	3616V10300

Product Construction Summary:

Carbon steel housing

Options/Subcomponent Summary:

UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
147.3	16.14	31.89	37.2	11.7	7.7	>33.3

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.0	1.0	1.5	3.2	2.4	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:

The UUT was rigid floor mounted using four (4) 3/8" lag screws with washers.
Unit maintained structural integrity and remained functional per manufacturer requirement.
Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET

TRU PROJECT NO. 16043

UUT 19

Manufacturer:	Carrier Corporation		
Model Line:	38MBR		
Model Number:	38MBRQ36A - 3	***Serial Number:***	2616V14685

Product Construction Summary:

Carbon steel housing

Options/Subcomponent Summary:

UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
154	15.55	37.2	31.89	9.9	13.9	>33.3

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.0	1.0	1.5	3.2	2.4	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:

The UUT was rigid floor mounted using four (4) 3/8" A307 bolts with washers.
Unit maintained structural integrity and remained functional per manufacturer requirement.
Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET

TRU PROJECT NO. 16043

UUT 20

Manufacturer:	Carrier Corporation		
Model Line:	38MBR		
Model Number:	38MBRQ48A - 3	***Serial Number:***	2316V13891

Product Construction Summary:

Carbon steel housing

Options/Subcomponent Summary:

UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
220	15.43	36.93	53.9	8.5	7.1	21.2

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.0	1.0	1.5	3.2	2.4	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:

The UUT was rigid floor mounted using four (4) 3/8" A307 bolts with washers.
Unit maintained structural integrity and remained functional per manufacturer requirement.
Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET

TRU PROJECT NO. 16043

UUT 21

Manufacturer:	Carrier Corporation		
Model Line:	38MGQ		
Model Number:	38MGQ18B - 3	***Serial Number:***	2316V12708

Product Construction Summary:

Carbon steel housing

Options/Subcomponent Summary:

UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
105.8	12.6	33.27	27.56	14.5	11.3	>33.3

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.0	1.0	1.5	3.2	2.4	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:

The UUT was rigid floor mounted using four (4) 3/8" lag screws with washers.
Unit maintained structural integrity and remained functional per manufacturer requirement.
Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET

TRU PROJECT NO. 16043

UUT 22

Manufacturer:	Carrier Corporation		
Model Line:	38MGQ		
Model Number:	38MGQ48E - 3	***Serial Number:***	3116V14026

Product Construction Summary:

Carbon steel housing

Options/Subcomponent Summary:

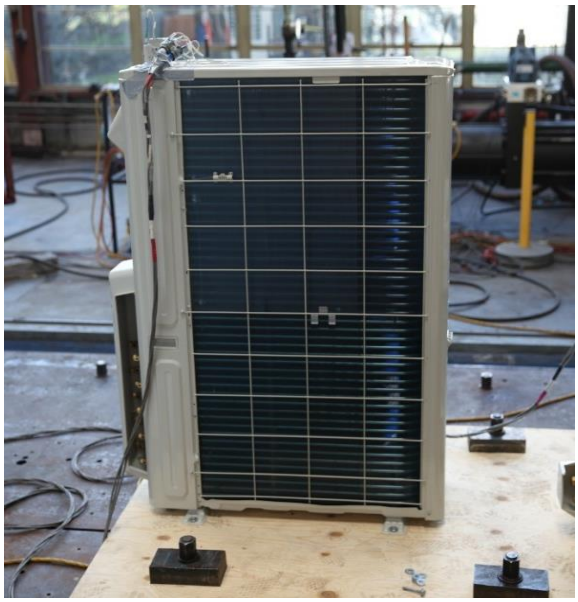
UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
227.7	15.43	36.9	53.9	9.5	6.4	>33.3

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.0	1.0	1.5	3.2	2.4	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:



The UUT was rigid floor mounted using four (4) 3/8" lag screws with washers.
Unit maintained structural integrity and remained functional per manufacturer requirement.
Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET

TRU PROJECT NO. 16043

UUT 23

Manufacturer:	Carrier Corporation		
Model Line:	40MAQ		
Model Number:	40MAQB09B-3	***Serial Number:***	2616V11354

Product Construction Summary:

Carbon steel internal frame; plastic outer cover

Options/Subcomponent Summary:

UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
19.18	7.8	32.87	11.02	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.0	1.0	1.5	3.2	2.4	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:

The UUT was rigid wall mounted using fifteen (15) #10 sheet metal screws.
Unit maintained structural integrity and remained functional per manufacturer requirement.
Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET

TRU PROJECT NO. 16043

UUT 24

Manufacturer:	Carrier Corporation		
Model Line:	40MAQ		
Model Number:	40MAQB36B-3	***Serial Number:***	3916V10089

Product Construction Summary:

Carbon steel internal frame; plastic outer cover

Options/Subcomponent Summary:

UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
40.12	10.16	46.69	13.39	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.0	1.0	1.5	3.2	2.4	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:

The UUT was rigid wall mounted using fifteen (15) #10 sheet metal screws.
Unit maintained structural integrity and remained functional per manufacturer requirement.
Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET

TRU PROJECT NO. 16043

UUT 25

Manufacturer: Carrier Corporation
Model Line: 40MBQ
Model Number: 40MBQB09D - 3 ***Serial Number:*** 1915V41300

Product Construction Summary:
Carbon steel internal frame; carbon steel outer cover

Options/Subcomponent Summary:
Requires seismic enhancements: (6) #10 self-tapping screws in each mounting bracket (24 total)

UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
39.9	25	27.6	8.3	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.0	1.0	1.5	3.2	2.4	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:

The UUT was ceiling hung using four (4) 3/8" Ø A36 hanger rods w/ rod stiffeners and four (4) 1/8" Ø diagonal cable braces w/ Mason SCB-1/SCBH-1 clips at each end.
Unit maintained structural integrity and remained functional per manufacturer requirement.
Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET

TRU PROJECT NO. 16043

UUT 26

Manufacturer:	Carrier Corporation		
Model Line:	40MBQ		
Model Number:	40MBQB24D - 3	***Serial Number:***	2116V15495

Product Construction Summary:

Carbon steel internal frame; carbon steel outer cover

Options/Subcomponent Summary:

Requires seismic enhancements: (6) #10 self-tapping screws in each mounting bracket (24 total)

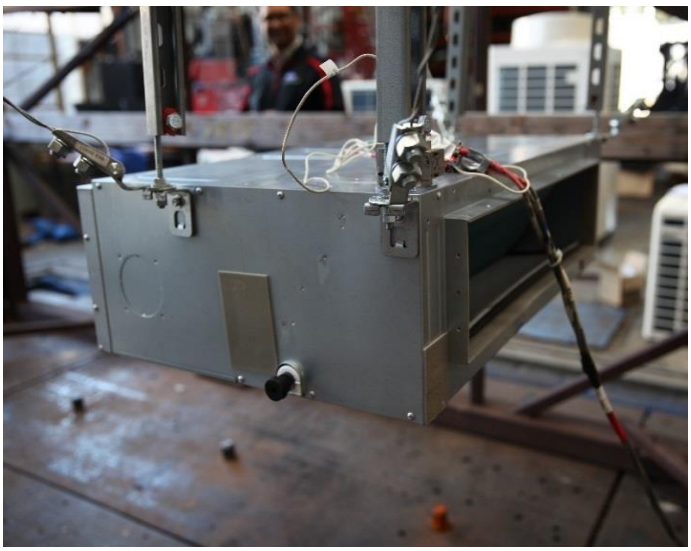
UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
57.3	25	36.2	10.6	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.0	1.0	1.5	3.2	2.4	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:



The UUT was ceiling hung using four (4) 3/8" Ø A36 hanger rods w/ rod stiffeners and four (4) 1/8" Ø diagonal cable braces w/ Mason SCB-1/SCBH-1 clips at each end.
Unit maintained structural integrity and remained functional per manufacturer requirement.
Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET

TRU PROJECT NO. 16043

UUT 27

Manufacturer:	Carrier Corporation		
Model Line:	40MBQ		
Model Number:	40MBQB09C - 3	***Serial Number:***	3116V12025

Product Construction Summary:

Carbon steel internal frame; plastic and carbon steel outer cover

Options/Subcomponent Summary:

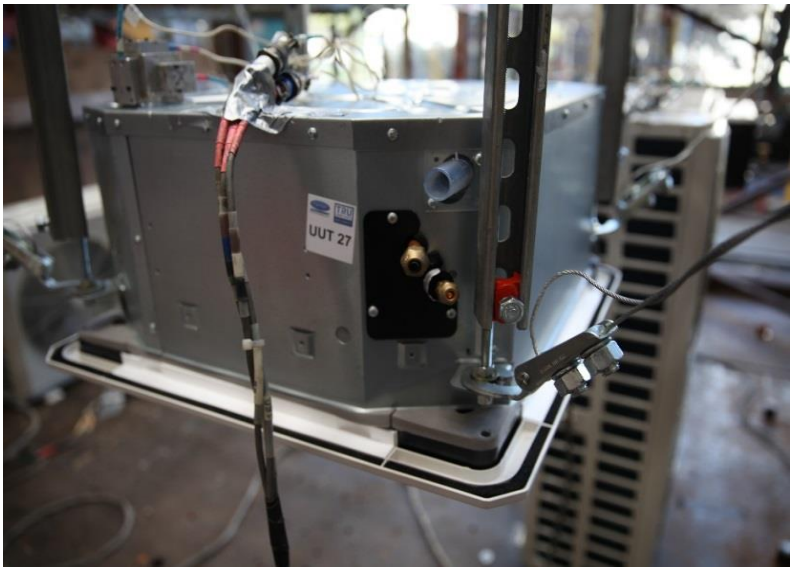
UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
40.8	22.4	22.4	10.2	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.0	1.0	1.5	3.2	2.4	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:



The UUT was ceiling hung using four (4) 3/8" Ø A36 hanger rods w/ rod stiffeners and four (4) 1/8" Ø diagonal cable braces w/ Mason SCB-1/SCBH-1 clips at each end. Future installations will require (8) perpendicular cable braces minimum to restrain against torsion.
Unit maintained structural integrity and remained functional per manufacturer requirement.
Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET

TRU PROJECT NO. 16043

UUT 28

Manufacturer:	Carrier Corporation		
Model Line:	40MBQ		
Model Number:	40MBQB18C - 3	***Serial Number:***	2216V17296

Product Construction Summary:

Carbon steel internal frame; plastic and carbon steel outer cover

Options/Subcomponent Summary:

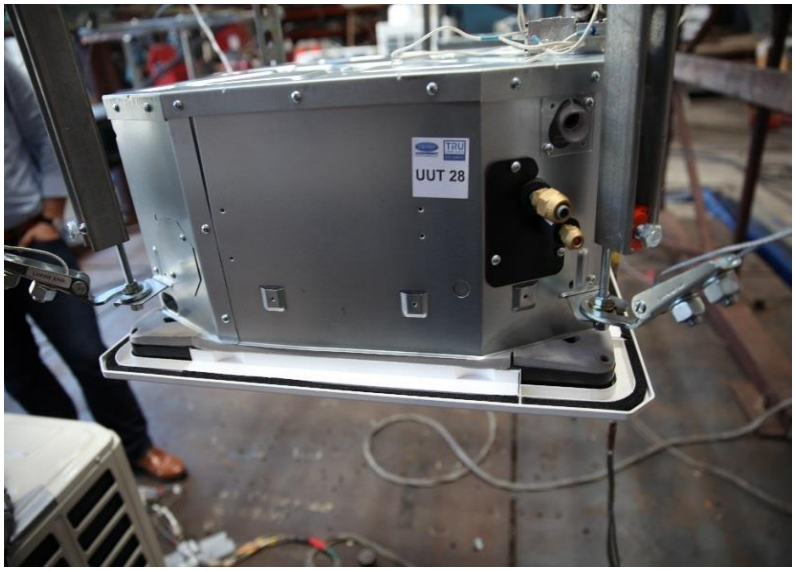
UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
45.2	22.4	22.4	10.2	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.0	1.0	1.5	3.2	2.4	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:



The UUT was ceiling hung using four (4) 3/8" Ø A36 hanger rods w/ rod stiffeners and four (4) 1/8" Ø diagonal cable braces w/ Mason SCB-1/SCBH-1 clips at each end. Future installations will require (8) perpendicular cable braces minimum to restrain against torsion.
Unit maintained structural integrity and remained functional per manufacturer requirement.
Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET

TRU PROJECT NO. 16043

UUT 29

Manufacturer:	Carrier Corporation		
Model Line:	40MBQ		
Model Number:	40MBQB09F - 3	***Serial Number:***	1715V28949

Product Construction Summary:

Carbon steel internal frame; plastic outer cover

Options/Subcomponent Summary:

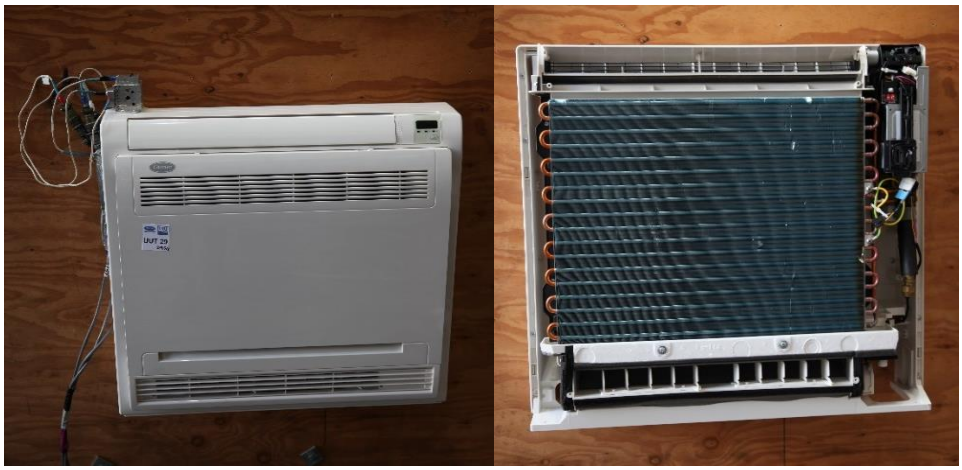
UUT Properties

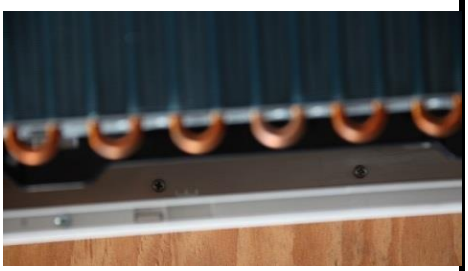
Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
32.4	23.6	27.6	8.3	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.0	1.0	1.5	3.2	2.4	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:





The UUT was rigid wall mounted using eight (8) #10 sheet metal screws.
Unit maintained structural integrity and remained functional per manufacturer requirement.
Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET

TRU PROJECT NO. 16043

UUT 30

Manufacturer:	Carrier Corporation		
Model Line:	40MBQ		
Model Number:	40MBQB12F - 3	***Serial Number:***	1516V10082

Product Construction Summary:

Carbon steel internal frame; plastic outer cover

Options/Subcomponent Summary:

UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
32.4	23.6	27.6	8.3	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.0	1.0	1.5	3.2	2.4	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:

The UUT was rigid wall mounted using eight (8) #10 sheet metal screws.
Unit maintained structural integrity and remained functional per manufacturer requirement.
Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET

TRU PROJECT NO. 16043

UUT 31

Manufacturer:	Carrier Corporation		
Model Line:	MMY		
Model Number:	MMY-MAP0726HT9UL	***Serial Number:***	62800002

Product Construction Summary:

Carbon steel housing

Options/Subcomponent Summary:

UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
621	30.7	39	72.8	8.3	11.5	>33.3

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.0	1.0	1.5	3.2	2.4	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:

The UUT was rigid floor mounted using four (4) 1/2" A307 bolts with washers.
Unit maintained structural integrity and remained functional per manufacturer requirement.
Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET

TRU PROJECT NO. 16043

UUT 32

Manufacturer:	Carrier Corporation		
Model Line:	MMY		
Model Number:	MMY-MAP1686FT6UL	***Serial Number:***	6280004

Product Construction Summary:

Carbon steel housing

Options/Subcomponent Summary:

UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
875	30.7	63	72.9	7.0	14.4	>33.3

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.0	1.0	1.5	3.2	2.4	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:

The UUT was rigid floor mounted using eight (8) 1/2" A307 bolts with washers.
Unit maintained structural integrity and remained functional per manufacturer requirement.
Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET

TRU PROJECT NO. 16043

UUT 33

Manufacturer:	Carrier Corporation		
Model Line:	MMK		
Model Number:	MMK-AP0073H2UL	***Serial Number:***	62800002

Product Construction Summary:

Carbon steel internal frame; plastic outer cover

Options/Subcomponent Summary:

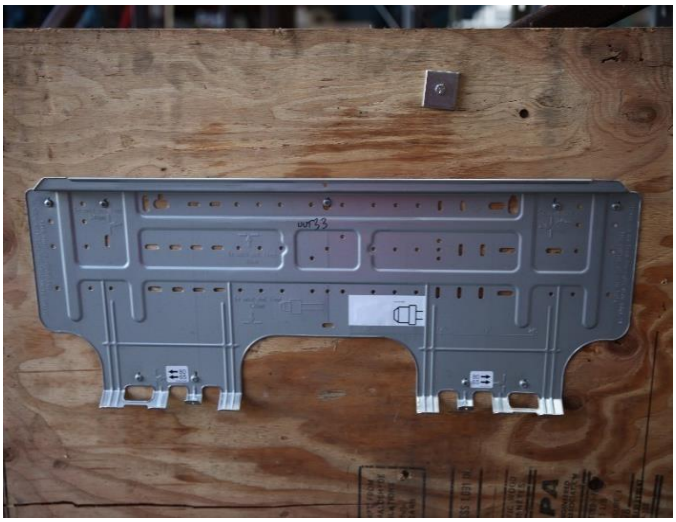
UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
33	9	41.3	12.6	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.0	1.0	1.5	3.2	2.4	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:



The UUT was rigid wall mounted using nine (9) #10 sheet metal screws.
Unit maintained structural integrity and remained functional per manufacturer requirement.
Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET

TRU PROJECT NO. 16043

UUT 34

Manufacturer:	Carrier Corporation		
Model Line:	MMK		
Model Number:	MMK-AP0243H2UL	***Serial Number:***	62600007

Product Construction Summary:

Carbon steel internal frame; plastic outer cover

Options/Subcomponent Summary:

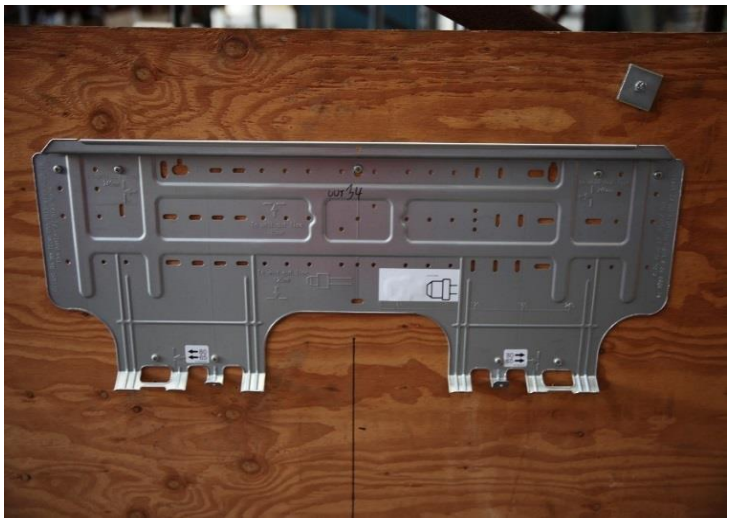
UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
33	9	41.3	12.6	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.0	1.0	1.5	3.2	2.4	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:



The UUT was rigid wall mounted using nine (9) #10 sheet metal screws.
Unit maintained structural integrity and remained functional per manufacturer requirement.
Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET

TRU PROJECT NO. 16043

UUT 35

Manufacturer:	Carrier Corporation		
Model Line:	MMC		
Model Number:	MMC-AP0181H2UL	***Serial Number:***	5092009

Product Construction Summary:

Carbon steel internal frame; plastic outer cover

Options/Subcomponent Summary:

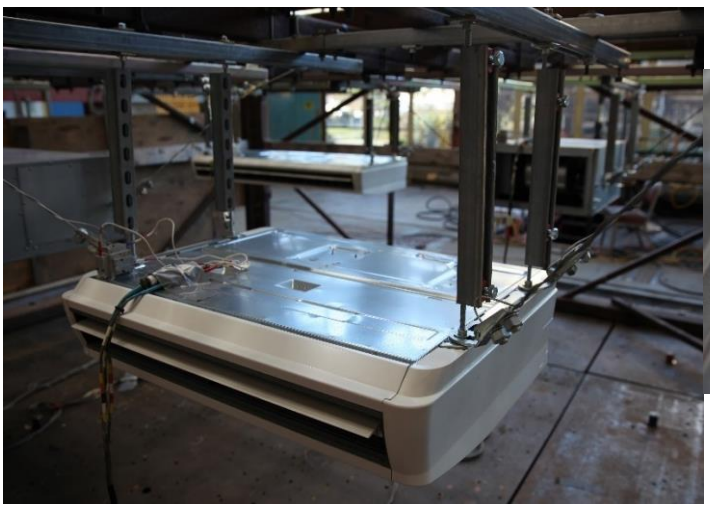
UUT Properties

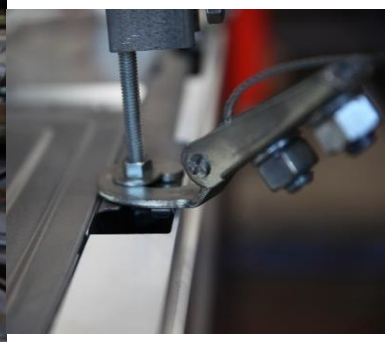
Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
46	26.8	35.8	8.3	N/A	N/A	N/A

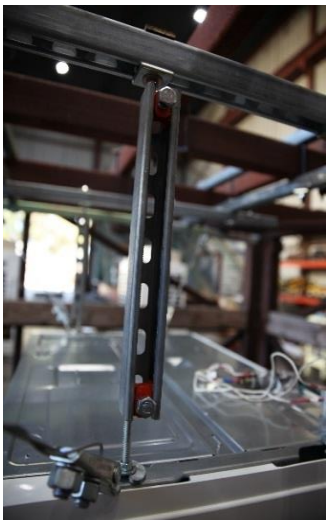
UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.0	1.0	1.5	3.2	2.4	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:







The UUT was ceiling hung using four (4) 3/8" Ø A36 hanger rods w/ rod stiffeners and four (4) 1/8" Ø diagonal cable braces w/ Mason SCB-1/SCBH-1 clips at each end.
Unit maintained structural integrity and remained functional per manufacturer requirement.
Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET

TRU PROJECT NO. 16043

UUT 36

Manufacturer:	Carrier Corporation		
Model Line:	MMC		
Model Number:	MMC-AP0421H2UL	***Serial Number:***	60720009

Product Construction Summary:

Carbon steel internal frame; plastic outer cover

Options/Subcomponent Summary:

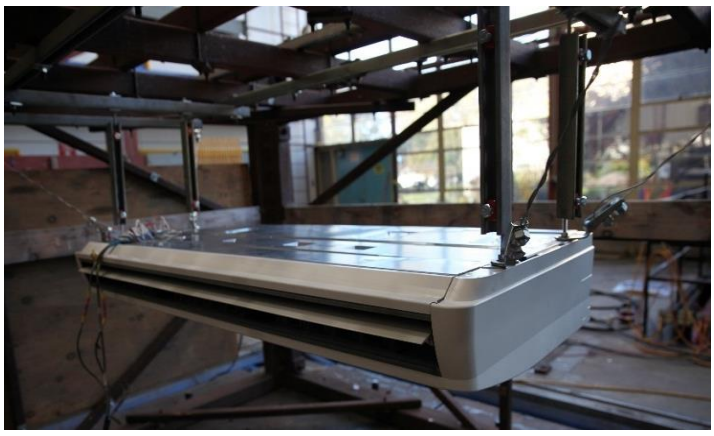
UUT Properties

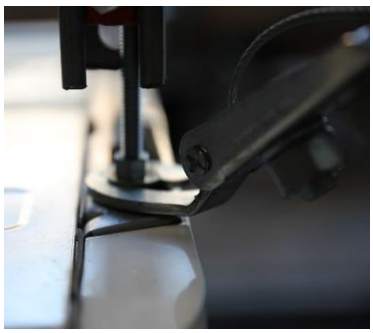
Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
75	26.8	62.8	8.3	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.0	1.0	1.5	3.2	2.4	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:





The UUT was ceiling hung using four (4) 3/8" Ø A36 hanger rods w/ rod stiffeners and four (4) 1/8" Ø diagonal cable braces w/ Mason SCB-1/SCBH-1 clips at each end.
Unit maintained structural integrity and remained functional per manufacturer requirement.
Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET

TRU PROJECT NO. 16043

UUT 37

Manufacturer:	Carrier Corporation		
Model Line:	MMD		
Model Number:	MMD-AP0074BH2UL	***Serial Number:***	40680035

Product Construction Summary:

Carbon steel internal frame; carbon steel outer cover

Options/Subcomponent Summary:

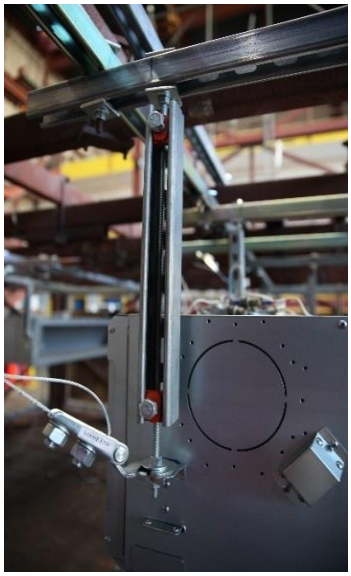
UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
64	31.5	21.7	12.6	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.0	1.0	1.5	3.2	2.4	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:



The UUT was ceiling hung using four (4) 3/8" Ø A36 hanger rods w/ rod stiffeners and four (4) 1/8" Ø diagonal cable braces w/ Mason SCB-1/SCBH-1 clips at each end.
Unit maintained structural integrity and remained functional per manufacturer requirement.
Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET

TRU PROJECT NO. 16043

UUT 38

Manufacturer: Carrier Corporation
Model Line: MMD
Model Number: MMD-AP0484BH2UL ***Serial Number:*** 40680003

Product Construction Summary:
Carbon steel internal frame; carbon steel outer cover

Options/Subcomponent Summary:

UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
119	31.5	53.2	12.6	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.0	1.0	1.5	3.2	2.4	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:

The UUT was ceiling hung using four (4) 3/8" Ø A36 hanger rods w/ rod stiffeners and four (4) 1/8" Ø diagonal cable braces w/ Mason SCB-1/SCBH-1 clips at each end.
Unit maintained structural integrity and remained functional per manufacturer requirement.
Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET

TRU PROJECT NO. 16043

UUT 39

Manufacturer: Carrier Corporation
Model Line: RBM
Model Number: RBM-Y0383FUL ***Serial Number:*** 60880027

Product Construction Summary:
Carbon steel internal frame; plastic outer cover

Options/Subcomponent Summary:

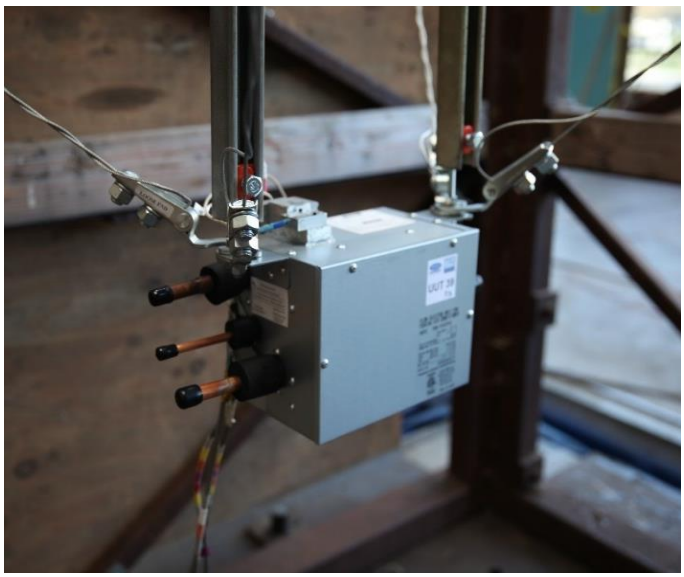
UUT Properties

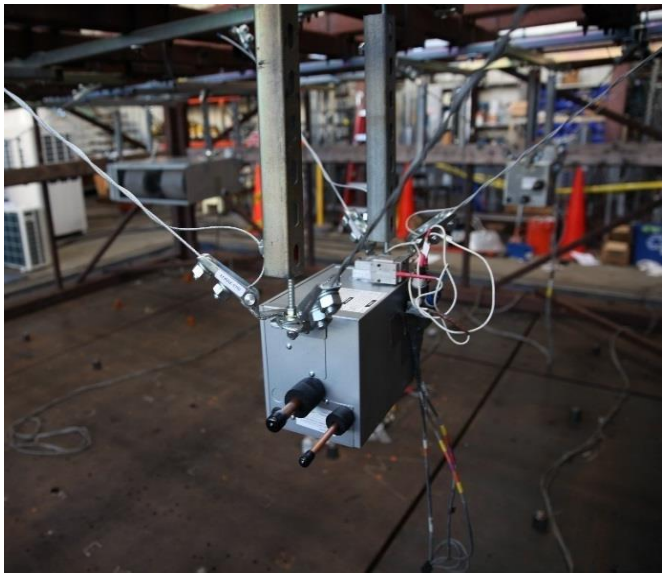
Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
11	6	9.7	7.5	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.0	1.0	1.5	3.2	2.4	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:





The UUT was ceiling hung using two (2) 3/8" Ø A36 hanger rods w/ rod stiffeners and four (4) 1/8" Ø diagonal cable braces w/ Mason SCB-1/SCBH-1 clips at each end.
Unit maintained structural integrity and remained functional per manufacturer requirement.
Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET

TRU PROJECT NO. 16043

UUT 40

Manufacturer:	Carrier Corporation		
Model Line:	RBM		
Model Number:	RBM-Y0963FUL	***Serial Number:***	31180021

Product Construction Summary:

Carbon steel internal frame; plastic outer cover

Options/Subcomponent Summary:

UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
20	7.9	15.8	7.9	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.0	1.0	1.5	3.2	2.4	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:

The UUT was ceiling hung using two (2) 3/8" Ø A36 hanger rods w/ rod stiffeners and four (4) 1/8" Ø diagonal cable braces w/ Mason SCB-1/SCBH-1 clips at each end.
Unit maintained structural integrity and remained functional per manufacturer requirement.
Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET

TRU PROJECT NO. 16043

UUT 41

Manufacturer:	Carrier Corporation		
Model Line:	40MBQ		
Model Number:	40MBQB36D-3	***Serial Number:***	4215V51146

Product Construction Summary:

Carbon steel internal frame; plastic outer cover

Options/Subcomponent Summary:

Requires seismic enhancements: (4) #10 self-tapping screws in each mounting bracket (16 total)

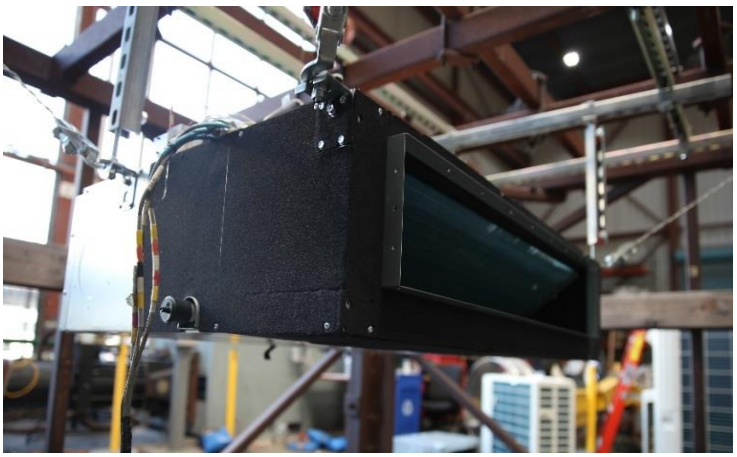
UUT Properties

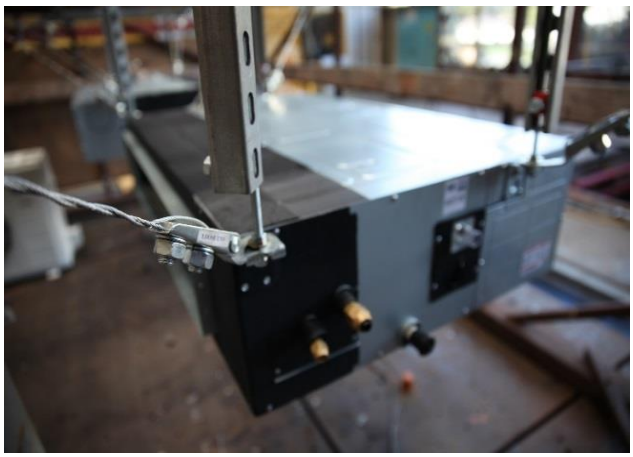
Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
77.2	34.1	47.2	11.8	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.0	1.0	1.5	3.2	2.4	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:





The UUT was ceiling hung using four (4) 3/8" Ø A36 hanger rods w/ rod stiffeners and four (4) 1/8" Ø diagonal cable braces w/ Mason SCB-1/SCBH-1 clips at each end.
Unit maintained structural integrity and remained functional per manufacturer requirement.
Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET

TRU PROJECT NO. 16043

UUT 42

Manufacturer:	Carrier Corporation		
Model Line:	40MBQ		
Model Number:	40MBQB48D-3	***Serial Number:***	4215V51146

Product Construction Summary:

Carbon steel internal frame; plastic outer cover

Options/Subcomponent Summary:

Requires seismic enhancements: (4) #10 self-tapping screws in each mounting bracket (16 total)

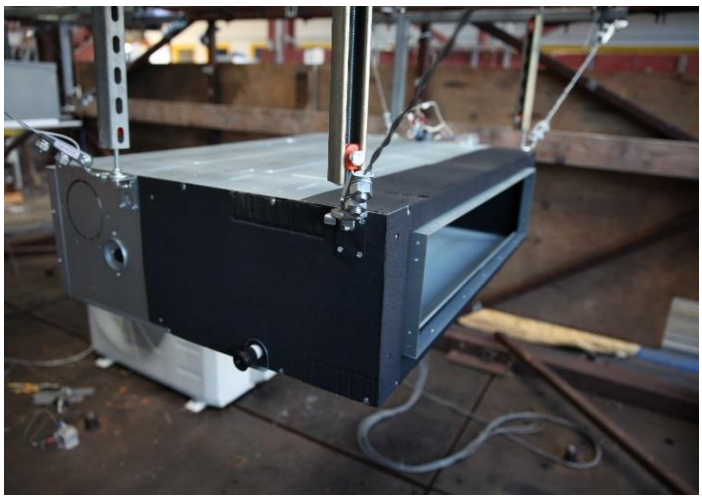
UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
99.2	30.51	47.24	11.81	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.0	1.0	1.5	3.2	2.4	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:



The UUT was ceiling hung using four (4) 3/8" Ø A36 hanger rods w/ rod stiffeners and four (4) 1/8" Ø diagonal cable braces w/ Mason SCB-1/SCBH-1 clips at each end.
Unit maintained structural integrity and remained functional per manufacturer requirement.
Contents were included in testing per operating conditions.