APPLICATION FOR OSHPD SPECIAL SEISMIC CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY	
APPLICATION #:	OSP – 0383-10

OSHPD Special Seismic Certification Preapproval (OSP)

Type: ☐ New ☒ Renewal

Manufacturer Information

Manufacturer: Carrier Corporation

Manufacturer's Technical Representative: Anthony Molavi

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

Telephone: (704) 921-3976 Email: Anthony.Molavi@carrier.utc.com

Product Information

Product Name: Carrier AquaSnap 30RB

Product Type: Air Cooled Chillers

Product Model Number: 30RB60 through 30RB390
(List all unique product identification numbers and/or part numbers)

General Description: 30RB is an air-cooled chiller, and includes modular combinations (see attached list). Seismic enhancements made to the test unit and modifications required to address anomalies during the test shall be incorporated into the production units.

Mounting Description: 30RB shall be rigidly floor or roof mounted direct to structure.

Applicant Information

Applicant Company Name: Carrier Corporation

Contact Person: Anthony Molavi

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

Telephone: (704) 921-3976 Email: Anthony.Molavi@carrier.utc.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: Anthony Molavi Date: 12/7/2016

Title: Engineering Manager Company Name: Carrier Corporation

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

Company Name: Buehler & Buehler Structural Engineers, Inc.

Name: Scott R. Hooker, S.E. California License Number: 3937 / Structural

Mailing Address: 600 Q Street, Sacramento, CA 95811

Telephone: (916) 443-0303 Email: shooker@bbse.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: University at Buffalo, SEESL

Contact Name: Mark Pitman

Mailing Address: Department of Civil, Structural, and Environmental Engineering, University at Buffalo, State University of New York, Buffalo, NY 14260-4300

Telephone: (716) 645-5400 Email: mpitman@eng.buffalo.edu

Company Name: QualTech NP Laboratories

Contact Name: Marie Nemier

Mailing Address: 4600 East Tech Drive, Cincinnati, OH,

Telephone: (513) 528-7900 Email: mnemier@curtisswright.com

Seismic Parameters

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

Design Basis of Equipment or Components (F_p/W_p) = 1.44

S_{DS} (Design spectral response acceleration at short period, g) = 2.00

a_p (In-structure equipment or component amplification factor) = 1.0

R_p (Equipment or component response modification factor) = 2.5

Ω_0 (System overstrength factor) = 2.0

I_p (Importance factor) = 1.5

z/h (Height factor ratio) = 1.0

Equipment or Component Natural Frequencies (Hz) = See Attachments

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

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) =

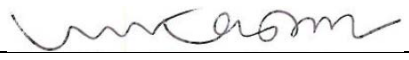
Tank(s) designed in accordance with ASME BPVC, 2015: ☐ Yes ☒ No

List of Attachments Supporting Special Seismic Certification

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

☐ Other(s) (Please Specify):

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

Signature:  Date: 2/6/2017

Print Name: M. R. Karim Title: SHFR

Special Seismic Certification Valid Up to : S_{DS} (g) = 2.0 z/h = 1

Condition of Approval (if applicable):

Table 1. 30RB Certified Components List

Model Number	Nominal Tonnage	Module A	Module B	Tested/ Interpolated	Length (in)	Width (in)	Height (in)	Operating Weight (lbs)
30RB_060	**60**	-	-	**UUT-1**	**95**	**89**	**90.5**	**4,616**
30RB_070	70	-	-	Interpolated	95	89	90.5	4,799
30RB_080	80	-	-	Interpolated	95	89	90.5	5,082
30RB_090	**90**	-	-	**UUT-2**	**142**	**89**	**90.5**	**5,449**
30RB_090	90	-	-	Interpolated	142	89	90.5	6,656
30RB_100	100	-	-	Interpolated	142	89	90.5	6,879
30RB_110	110	-	-	Interpolated	142	89	90.5	7,243
30RB_120	120	-	-	Interpolated	189	89	90.5	8,543
30RB_130	130	-	-	Interpolated	189	89	90.5	9,010
30RB_150	150	-	-	Interpolated	189	89	90.5	10,139
30RB_160	160	-	-	Interpolated	236	89	90.5	11,472
30RB_170	170	-	-	Interpolated	236	89	90.5	11,807
30RB_190	190	-	-	Interpolated	283	89	90.5	13,460
30RB_210	210	-	-	Interpolated	283	89	90.5	15,181
30RB_225	225	-	-	Interpolated	283	89	90.5	15,514
30RB_250	250	-	-	Interpolated	330	89	90.5	17,157
30RB_275	275	-	-	Interpolated	377	89	90.5	18,845
30RB_300	**300**	-	-	**UUT-3**	**424**	**89**	**90.5**	**16,893**
30RB_315*	315	30RB160	30RB160	Interpolated	472	89	90.5	22,944
30RB_330*	330	30RB170	30RB160	Interpolated	472	89	90.5	23,279
30RB_345*	345	30RB170	30RB170	Interpolated	472	89	90.5	23,614
30RB_360*	360	30RB190	30RB170	Interpolated	519	89	90.5	25,267
30RB_390*	390	30RB190	30RB190	Interpolated	566	89	90.5	26,920

Carrier Corporation manufactures above listed units

* Modular combinations (may be attached or installed separate)

UUT-1 Test Summary

Testing Lab: Univ. at Buffalo
Testing Report: UB CSEE/SEESL-2010-11 dated November 18, 2010
Testing Unit Num: UUT1

Model Number	*Tonnage*	Operating Weight (lbs)	*Mounting*	*Excitation Direction*	*Frequency* (Hz)*	Length (in)	Width (in)	Height (in)
30RBB06064B4---L	60	4,616	Rigid Mount at Base	X	9.0	95	89	90.5
				Y	8.4			
				Z	11.1			

* Frequencies are for units prior to ICC ES AC-156 testing.
Model Numbers are based on nomenclautre from the 2009 Catalog

Identification No. 30RBB06064B4---L
Attachment Method Hard mount with (4) 3/4" Ø A325 bolts

Seismic Parameters							
Building Code	Test Criteria	S_{DS} (g)	z/h	Horizontal		Vertical	
				A_{FLX-H}	A_{RIG-H}	A_{FLX-V}	A_{RIG-V}
CBC 2016	AC 156	2.00	1.0	3.2g	2.4g	1.33g	0.54g

Figure 1: Unit on the shake table

Notes: The UUTs were full of contents during the test.
After the test, the UUT was functional and the structural integrity of the compenent attachment and force-resisting systems was maintained.

UUT-1 Summary Sub-Component List Tested

Sub-Component	*Part Number*	*Manufacturer*	*Material*
Compressor- Scroll Hermetic	SH295A4ACE	Danfoss	Carbon Steel Housing
Condenser - Microchannel	00PPG000473501A	Delphi	Aluminum Tubing, Fins and Header
Condenser - Fan Motor	00PPG000007202A	Marathon	Carbon-Steel
Cooler - Direct Expansion Shell and Tube	00PSN800000202A	Carrier	Copper Tubes and Carbon Steel Sh
Pump	00PSN500727113A	Armstrong	Carbon Steel Housing
Control Box Assembly	C30RB060	Schneider	Carbon-Steel
Internal Seismic Strap Bracing	00PSN000035500A-01	Metcam	Carbon-Steel
Internal Seismic Strap Bracing	00PSN000035500A-02	Metcam	Carbon-Steel
Internal Seismic Strap Bracing	00PSN000035500A-03	Metcam	Carbon-Steel
Internal Seismic Strap Bracing	00PSN000035500A-04	Metcam	Carbon-Steel

UUT-2 Test Summary

Testing Lab: QualTech NP
Testing Report: Q1402.00 dated January 31, 2014
Testing Unit Num: n/a

Model Number	*Tonnage*	*Operating Weight (lbs)*	*Mounting*	*Excitation Direction*	*Frequency* (Hz)*	*Length (in)*	*Width (in)*	*Height (in)*
30RBE09064-LH--3	90	5,449	Rigid Mount at Base	X	13.6	142	89	90
				Y	35.0			
				Z	20.3			

* Frequencies are for units prior to ICC ES AC-156 testing.
Model Numbers are based on nomenclautre from the 2015 Catalog

Identification No. 30RBE09064-LH--3
Attachment Method Hard mount
with (4) 3/4" Ø A325 bolts

Seismic Parameters							
Building Code	Test Criteria	S_{DS} (g)	z/h	Horizontal		Vertical	
				A_{FLX-H}	A_{RIG-H}	A_{FLX-V}	A_{RIG-V}
CBC 2016	AC 156	2.00	1.0	3.2g	2.4g	1.33g	0.54g

Figure 2: Unit on the shake table

Notes: The UUTs were full of contents during the test.
After the test, the UUT was functional and the structural integrity of the compenent attachment and force-resisting systems was maintained.

UUT-2 Summary Sub-Component List Tested

Sub-Component	*Part Number*	*Manufacturer*	*Material*
Compressor- Scroll Hermetic	SH240A4ACC	Danfoss	Carbon Steel Housing
Condenser - Microchannel	00PPG000526901A	Danfoss	Aluminum Tubing, Fins and Header
Condenser - Fan Motor	00PPG000007202A	Marathon	Carbon-Steel
Cooler - Direct Expansion Shell and Tube	00PSN800000402A	Carrier	Copper Tubes and Carbon Steel Sh
Control Box Assembly	C30RB090	Schneider	Carbon-Steel
Fan VFD	HR46ZV001 HR46ZT002	Danfoss	Aluminum
Internal Seismic Strap Bracing	00PSN000035500A-01	Metcam	Carbon-Steel
Internal Seismic Strap Bracing	00PSN000035500A-02	Metcam	Carbon-Steel
Internal Seismic Strap Bracing	00PSN000035500A-03	Metcam	Carbon-Steel
Internal Seismic Strap Bracing	00PSN000035500A-04	Metcam	Carbon-Steel

UUT-3 Test Summary

Testing Lab: Univ. at Buffalo
Testing Report: No. UB CSEE/SEESL-2010-11 dated November 18, 2010
Testing Unit Num: UUT2

Model Number	*Tonnage*	Operating Weight (lbs)	*Mounting*	*Excitation Direction*	*Frequency* (Hz)*	Length (in)	Width (in)	Height (in)
30RBBB30064-4---L	300	16,893	Rigid Mount at Base	X	6.5	424	89	90.5
				Y	3.9			
				Z	8.4			

* Frequencies are for units prior to ICC ES AC-156 testing.
Model Numbers are based on nomenclautre from the 2009 Catalog

Identification No. 30RBBB30064-4---L
Attachment Method Hard mount
with (12) 3/4" Ø A325 bolts

Seismic Parameters							
Building Code	Test Criteria	S_{DS} (g)	z/h	Horizontal		Vertical	
				A_{FLX-H}	A_{RIG-H}	A_{FLX-V}	A_{RIG-V}
CBC 2016	AC 156	2.00	1.0	3.2g	2.4g	1.33g	0.54g

Figure 3: Unit on the shake table

Notes: The UUTs were full of contents during the test.
After the test, the UUT was functional and the structural integrity of the compenent attachment and force-resisting systems was maintained.

UUT-3 Summary Sub-Component List Tested

Sub-Component	*Part Number*	*Manufacturer*	*Material*
Compressor- Scroll Hermetic	SH300A4ACC	Danfoss	Carbon Steel Housing
Condenser - Microchannel	00PPG000473501A	Delphi	Aluminum Tubing, Fins and Header
Condenser - Fan Motor	00PPG000007202A	Marathon	Carbon-Steel
Cooler - Direct Expansion Shell and Tube	00PSN800001002A	Carrier	Copper Tubes and Carbon Steel SH
Control Box Assembly	C30RB300	Schneider	Carbon-Steel
Internal Seismic Strap Bracing	00PSN000035500A-01	Metcam	Carbon-Steel
Internal Seismic Strap Bracing	00PSN000035500A-02	Metcam	Carbon-Steel
Internal Seismic Strap Bracing	00PSN000035500A-03	Metcam	Carbon-Steel
Internal Seismic Strap Bracing	00PSN000035500A-04	Metcam	Carbon-Steel

Table 2. Certified Sub-Component List: 30RB

Compressor - Scroll Hermetic						
Part Number	***Nominal Capacity***	***Voltage***	***Manufacturer***	***Material***	***Sub-Component Weight (lb)***	***Interpolated / Included With Test***
SH240A3ACC	20.0 tons	208/230V	Danfoss	Carbon Steel Housing	237.6	Interpolated
SH240A4ACC	**20.0 tons**	**460 V**	**Danfoss**	**Carbon Steel Housing**	**237.6**	**UUT-2**
SH240A7ACC	20.0 tons	575 V	Danfoss	Carbon Steel Housing	237.6	Interpolated
SH240A9ACC	20.0 tons	380 V	Danfoss	Carbon Steel Housing	237.6	Interpolated
SH295A3ACE	25.0 tons	208/230V	Danfoss	Carbon Steel Housing	244.2	Interpolated
SH295A4ACE	**25.0 tons**	**460 V**	**Danfoss**	**Carbon Steel Housing**	**244.2**	**UUT-1**
SH295A7ACE	25.0 tons	575 V	Danfoss	Carbon Steel Housing	244.2	Interpolated
SH295A9ACE	25.0 tons	380 V	Danfoss	Carbon Steel Housing	244.2	Interpolated
SH300A3ACC	25.0 tons	208/230V	Danfoss	Carbon Steel Housing	336.6	Interpolated
SH300A4ACC	**25.0 tons**	**460 V**	**Danfoss**	**Carbon Steel Housing**	**336.6**	**UUT-3**
SH300A7ACC	25.0 tons	575 V	Danfoss	Carbon Steel Housing	336.6	Interpolated
SH300A9ACC	25.0 tons	380 V	Danfoss	Carbon Steel Housing	336.6	Interpolated

Condenser - Microchannel					
Part Number	***Length (in) - Height (in)***	***Manufacturer***	***Material***	***Sub-Component Weight (lb)***	***Interpolated / Included With Test***
00PPG000473501A	**80.4 x 44**	**Delphi**	**Aluminum Tubing, Aluminum Fins and Headers**	**70 ea**	**UUT-1, UUT-3**
00PPG000526901A	**80.4 x 44**	**Danfoss**	**Aluminum Tubing, Aluminum Fins and Headers**	**70 ea**	**UUT-2**

Condenser - Fan Motor					
Part Number	***Power [kW]***	***Manufacturer****	***Material***	***Sub-Component Weight (lb)***	***Interpolated / Included With Test***
TEAO 00PPG000007203A	2.3(230V)	Marathon	Carbon-Steel	45	Interpolated
TEAO 00PPG000007202A	**2.3(460V)**	**Marathon**	**Carbon-Steel**	**45**	**UUT-1, UUT-2, UUT-3**
TEAO 00PPG000007204A	2.3(380V)	Marathon	Carbon-Steel	45	Interpolated
TEAO 00PPG000007205A	2.3(575V)	Marathon	Carbon-Steel	45	Interpolated

Difference in inteprolated subcomponent is software only
* Formerly known as "Regel Beloit"

Table 2. Certified Sub-Component List: 30RB cont

Cooler - Direct Expansion Shell and Tube					
Part Number	*Nominal Capacity*	*Manufacturer*	*Material*	*Sub-Component Weight (lb)*	*Interpolated / Included With Test*
00PSN800000202A	**28.2 gal**	**Carrier**	**Copper Tubes and Carbon Steel Shell**	**715**	**UUT-1**
00PSN800000402A	**31.3 gal**	**Carrier**	**Copper Tubes and Carbon Steel Shell**	**856**	**UUT-2**
00PSN800000602A	45.8 gal	Carrier	Copper Tubes and Carbon Steel Shell	970	Interpolated
00PSN800097608A	73.5 gal	Carrier	Copper Tubes and Carbon Steel Shell	1518	Interpolated
00PSN800001002A	**86.6 gal**	**Carrier**	**Copper Tubes and Carbon Steel Shell**	**2382**	**UUT-3**

Single/Dual Speed Pump Options						
Part Number	*Nominal capacity*	*Voltage*	*Manufacturer*	*Material*	*Sub-Component Weight (lb)*	*Interpolated / Included With Test*
00PSN500727010A	10.0 HP	208/230V	Armstrong	Carbon steel housing	450	Interpolated
00PSN500727011A	10.0 HP	380V	Armstrong	Carbon steel housing	450	Interpolated
00PSN500727010A	**10.0 HP**	**460V**	**Armstrong**	**Carbon steel housing**	**450**	**UUT-1**
00PSN500727012A	10.0 HP	575V	Armstrong	Carbon steel housing	450	Interpolated

Difference in interpolated subcomponent is software only

Control Box Assembly					
Part Number	*Nominal Tonnage*	*Manufacturer*	*Material*	*Sub-Component Weight (lb)*	*Interpolated / Included With Test*
C30RB060	**208-230/60, 380/60, 460/60, or 575/60**	**Schneider**	**Carbon-Steel**	**150**	**UUT-1**
C30RB070	208-230/60, 380/60, 460/60, or 575/60	Schneider	Carbon-Steel	150	Interpolated
C30RB080	208-230/60, 380/60, 460/60, or 575/60	Schneider	Carbon-Steel	150	Interpolated
C30RB090	**208-230/60, 380/60, 460/60, or 575/60**	**Schneider**	**Carbon-Steel**	**150**	**UUT-2**
C30RB100	208-230/60, 380/60, 460/60, or 575/60	Schneider	Carbon-Steel	150	Interpolated
C30RB110	208-230/60, 380/60, 460/60, or 575/60	Schneider	Carbon-Steel	175	Interpolated
C30RB120	208-230/60, 380/60, 460/60, or 575/60	Schneider	Carbon-Steel	175	Interpolated
C30RB130	208-230/60, 380/60, 460/60, or 575/60	Schneider	Carbon-Steel	250	Interpolated
C30RB150	208-230/60, 380/60, 460/60, or 575/60	Schneider	Carbon-Steel	250	Interpolated
C30RB160	208-230/60, 380/60, 460/60, or 575/60	Schneider	Carbon-Steel	300	Interpolated
C30RB170	208-230/60, 380/60, 460/60, or 575/60	Schneider	Carbon-Steel	300	Interpolated
C30RB190	208-230/60, 380/60, 460/60, or 575/60	Schneider	Carbon-Steel	300	Interpolated
C30RB210	208-230/60, 380/60, 460/60, or 575/60	Schneider	Carbon-Steel	450	Interpolated
C30RB225	208-230/60, 380/60, 460/60, or 575/60	Schneider	Carbon-Steel	450	Interpolated
C30RB250	208-230/60, 380/60, 460/60, or 575/60	Schneider	Carbon-Steel	450	Interpolated
C30RB275	208-230/60, 380/60, 460/60, or 575/60	Schneider	Carbon-Steel	450	Interpolated
C30RB300	**208-230/60, 380/60, 460/60, or 575/60**	**Schneider**	**Carbon-Steel**	**450**	**UUT-3**

VFD					
Part Number	*Power Range [HP]*	*Manufacturer*	*Material*	*Sub-Component Weight (lb)*	*Interpolated / Included With Test*
HR46ZR001	10	Danfoss	Aluminum	31	Extrapolated
HR46ZT002	**20**	**Danfoss**	**Aluminum**	**51**	**UUT-2**
HR46ZQ003	10	Danfoss	Aluminum	51	Interpolated
HR46ZV001	**30**	**Danfoss**	**Aluminum**	**60**	**UUT-2**

Internal Seismic Strap Bracing					
Part Number	*Capacity*	*Manufacturer*	*Material*	*Sub-Component Weight (lb)*	*Interpolated / Included With Test*
00PSN000035500A-01	**n/a**	**Metcam**	**Carbon-Steel**	**2**	**UUT-1, UUT-2, UUT-3**
00PSN000035500A-02	**n/a**	**Metcam**	**Carbon-Steel**	**10**	**UUT-1, UUT-2, UUT-3**
00PSN000035500A-03	**n/a**	**Metcam**	**Carbon-Steel**	**7**	**UUT-1, UUT-2, UUT-3**
00PSN000035500A-04	**n/a**	**Metcam**	**Carbon-Steel**	**2**	**UUT-1, UUT-2, UUT-3**

Model Number Nomenclature

30RB F 190 6 - 8 0 - - - L

30RB – Air-Cooled AquaSnap® Chiller

Design Series

Nominal Sizes

060	110	170	275	360*
070	120	190	300	390*
080	130	210	315*	
090	150	225	330*	
100	160	250	345*	

Voltage
1 – 575-3-60
2 – 380-3-60
5 – 208/230-3-60
6 – 460-3-60

Condenser Coil Options
- – Aluminum Fin/Copper Tube
0 – Copper Fin/Copper Tube
1 – Aluminum Pre-Coat Fin/Copper Tube
2 – Aluminum E-Coat Fin/Copper Tube
3 – Copper E-Coat Fin/Copper Tube
4 – Microchannel (MCHX)
5 – E-Coat, Microchannel (MCHX)

Hydronics Option
- – No Pump Installed
0 – Single Pump, 3 HP
1 – Single Pump, 5 HP
2 – Single Pump, 7.5 HP
3 – Single Pump, 10 HP
4 – Single Pump, 15 HP
6 – Dual Pump, 3 HP
7 – Dual Pump, 5 HP
8 – Dual Pump, 7.5 HP, Low Head
9 – Dual Pump, 7.5 HP, High Head
B – Dual Pump, 10 HP
C – Dual Pump, 15 HP
E – Single Pump, 3 HP with VFD
G – Single Pump, 5 HP with VFD
H – Single Pump, 7.5 HP with VFD
J – Single Pump, 10 HP with VFD
K – Single Pump, 15 HP with VFD
M – Dual Pump, 3 HP with VFD
N – Dual Pump, 5 HP with VFD
P – Dual Pump, 7.5 HP, Low Head with VFD
T – Dual Pump, 7.5 HP, High Head with VFD
Q – Dual Pump, 10 HP with VFD
R – Dual Pump, 15 HP with VFD
Z – Special order designation

SEE NEXT PAGE FOR REMAINDER OF MODEL NUMBER NOMENCLATURE

Cooler Options
- – Integral Cooler, CRN (Canada)
0 – Integral Cooler, Cooler Heater, CRN (Canada)
4 – Integral Cooler, Microchannel (MCHX), CRN (Canada)
5 – Integral Cooler, Cooler Heater, Microchannel (MCHX), CRN (Canada)
G – Integral Cooler, no CRN
H – Integral Cooler, Cooler Heater, no CRN
K – Integral Cooler, Microchannel (MCHX), no CRN
L – Integral Cooler, Cooler Heater, Microchannel (MCHX), no CRN
R – Integral Cooler, Microchannel (MCHX), Heat Recovery, no CRN
S – Integral Cooler, Cooler Heater, Microchannel (MCHX), Heat Recovery, no CRN
T – Integral Cooler, Microchannel (MCHX), Heat Recovery, CRN (Canada)
V – Integral Cooler, Cooler Heater, Microchannel (MCHX), Heat Recovery, CRN (Canada)

LEGEND
CR – Canadian Registration Number
EMM – Energy Management Module
GF – Ground Fault Interrupting Convenience Outlet
LON – Local Operating Network
SCCR – Short Circuit Current Rating
VFD – Variable Frequency Device
XL – Across-the-Line Start

Refer to the Unit Sizes and Modular Combinations table below.
NOTE: A "Z" in position 11 indicates a special order machine. Digits following do not correspond to tables.

Quality Assurance
Certified to ISO 9001

UNIT SIZES AND MODULAR COMBINATIONS

UNIT SIZE	NOMINAL TONS	NOMINAL kW	MODULE A	MODULE B
060	60	210	—	—
070	70	245	—	—
080	80	280	—	—
090	90	315	—	—
100	100	350	—	—
110	110	385	—	—
120	120	421	—	—
130	130	456	—	—
150	150	526	—	—
160	160	562	—	—
170	170	597	—	—

UNIT SIZE	NOMINAL TONS	NOMINAL kW	MODULE A	MODULE B
190	190	667	—	—
210	210	737	—	—
225	225	791	—	—
250	250	879	—	—
275	275	967	—	—
300	300	1055	—	—
315	315	1107	160	160
330	330	1160	170	160
345	345	1213	170	170
360	360	1266	190	170
390	390	1370	190	190