

OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT FACILITIES DEVELOPMENT DIVISION

APPLICATION FOR OSHPD SPECIAL SEISMIC	OFFICI	E USE ONLY
CERTIFICATION PREAPPROVAL (OSP)	APPLICATION #:	OSP - 0171
OSHPD Special Seismic Certification Preapproval (OSP)		
Type: ☐ New ☐ Renewal		
Manufacturer Information		
Manufacturer: SPX Cooling Technologies, Inc.		
Manufacturer's Technical Representative: Derek Sinn		
Mailing Address: _7401 W. 129 Street, Overland Park, KS 66213		
	sinn@spx.com	
Product Information	MA	
Product Name: Marley NC Cooling Tower OSHPD	N. P.	
Product Type: Cooling Tower OSP-0171	- A	
Product Model Number: NC8401-NC8414, TQNC8401-TQNC8414 (List all unique product identification numbers and/or part numbers)	nd /////	
General Description: Marley NC Cooling Towers for AHU, refrigerate Rigid and vibration isolation mounted, galvanized carbon or stainless dunnage frames. Seismic enhancement made to the test units and mobserved during the tests shall be incorporated into the production units and mobserved during the tests shall be incorporated into the production units and mobserved during the tests shall be incorporated into the production units and mobserved during the tests shall be incorporated into the production units and mobserved during the tests and mobserved during the test and mobserved during the test and mobserved during the test and mobserved duri	ion, and industrial uses steel. Towers are insta odifications required to	lled atop engineered
Mounting Description: Rigid and spring vibration isolated mounted –	CK.	responding S _{DS} levels.
Applicant Information	200	
Applicant Company Name: The VMC Group		
Contact Person: Mr. John Giuliano		
Mailing Address: 113 Main Street, Bloomingdale, NJ 07403		
Telephone: 973-838-1780 Email: john.gi	uliano@thevmcgroup.c	<u>om</u>
I hereby agree to reimburse the Office of Statewide Health I accordance with the California Administrative Code, 2016.	Planning and Develo	opment review fees in
Signature of Applicant:	Date	e: <u>9/30/19</u>
Title: President Company Name: The VI	MC Group	

"Access to Safe, Quality Healthcare Environments that Meet California's Diverse and Dynamic Needs"





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OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT FACILITIES DEVELOPMENT DIVISION

California Licensed Structural Engineer Responsible for the Engineering and Test Report(s)
Company Name: The VMC Group
Name: Mr. Ken Tarlow California License Number: SE2851
Mailing Address: 113 Main St, Bloomingdale, NJ 07403
Telephone: 973-838-1780 Email: ken.tarlow@thevmcgroup.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
 ☐ Other (Please Specify):
OSP-0171
/ ///////
Testing Laboratory BY: Timothy J Piland
Company Name: PEER, UC Berkeley DATE: 02/08/2021
Contact Name: Amarnath Kasalanati
Mailing Address: 1301 South 46th Street, Building 420, Richmond, CA 94804
Telephone: (510) 642-6475 Email: amarnath1@berkeley.edu





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Seismic Parameters
Design in accordance with ASCE 7-10 Chapter 13: ⊠ Yes ☐ No
Design Basis of Equipment or Components (F _p /W _p) = Rigid (1.00, z/h = 1 & 0); Isolated (4.50; z/h = 1)
Rigid (2.00 @ $z/h = 0$) S _{DS} (Design spectral response acceleration at short period, g) = Vibration Isolated (2.00 @ $z/h = 1$)
a _p (In-structure equipment or component amplification factor) = 2.5
R _p (Equipment or component response modification factor) = 3.0 (Rigid); 2.0 (Vibration Isolated)
Ω_0 (System overstrength factor) =2
I _p (Importance factor) = 1.5
z/h (Height factor ratio) = 1 and 0
Equipment or Component Natural Frequencies (Hz) = See Attachment
Overall dimensions and weight (or range thereof) = <u>See Attachment</u>
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: 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, 2025
Signature: Date: February 8, 2021
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):
OCLIDE

"Access to Safe, Quality Healthcare Environments that Meet California's Diverse and Dynamic Needs"

STATE OF CALIFORNIA - HEALTH AND HUMAN SERVICES AGENCY

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OSHPD

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Unit Size	Fan, Sound and Certification	Unit Length	Unit Width	Unit Height	Operating Weight per Cell [lbs] 8,702	Tested Weight [lbs]	Voltage	Primary Structure Material	Hot / Cold Water Basin Material	S _{DS} z/h=0 [g]	UUT
	HAE	6'-6 1/4"	12'-10"	10'-2 1/2"	8,697						
	HLE	6'-6 1/4"	12'-10"	10'-2 1/2"	8,737						
	KAE	6'-6 1/4"	12'-10"	10'-2 1/2"	8,660	N/A	_		Galv. Carbon Steel	2.00	Interpolated
	KLE	6'-6 1/4"	12'-10"	10'-2 1/2"	8,700	K COD	ECOM	/ Stainless Steel	/ Stainless Steel		
	MAE	6'-6 1/4"	12'-10"	10'-2 1/2"	8,698		M	6.			
NC8401	MLE	6'-6 1/4"	12'-10"	10'-2 1/2"	8,738	C 1 1 1	000 575				
TQ8401	NAE	6'-6 1/4"	12'-10"	10'-2 1/2"	8,362	8,362	200 - 575	Stainless Steel	Stainless Steel	2.00	1A
	NAE	6'-6 1/4"	12'-10"	10'-2 1/2"	8,362			Galv. Carbon Steel	Galv. Carbon Steel	2.00	lusta un alata d
	NCE	6'-6 1/4"	12'-10"	10'-2 1/2"	9,000	SMAO	71	/ Stainless Steel	/ Stainless Steel	2.00	Interpolated
	NCE	6'-6 1/4"	12'-10"	9'-9"	9,000	9,000		Stainless Steel	Stainless Steel	2.00	3A
	NLE	6'-6 1/4"	12'-10"	10'-2 1/2"	_8,768	othy I	Piland	Caly Carbon Stool	Galv. Carbon Steel		
	PAE	6'-6 1/4"	12'-10"	1 <mark>0'-2 1</mark> /2"	8,837	othy J	Plianc	/ Stainless Steel	/ Stainless Steel	2.00	Interpolated
	PLE	6'-6 1/4"	12'-10"	1 <mark>0'-2 1</mark> /2"	8,897			/ Stairliess Steel	/ Stairliess Steel		
	GCE	8'-4 3/4"	14'-2"	10'-3"	12,152	2/08/2	2021				
	GLE	8'-4 3/4"	14'-2"	10'-3"	12,243	101111111111111111111111111111111111111	WWW.				
	HAE	8'-4 3/4"	14'-2"	10'-3"	12,207	*		(5)			
	HCE	8'-4 3/4"	14'-2"	10'-3"	12,139			1			
	HLE	8'-4 3/4"	14'-2"	10'-3"	12,207			(V.)			
	KAE	8'-4 3/4"	14'-2"	10'-3"	12,306	······································	ING CO				
	KCE	8'-4 3/4"	14'-2"	10'-3"	12,165	BUILD	ING				
	KLE	8'-4 3/4"	14'-2"	10'-3"	12,257						
	MAE	8'-4 3/4"	14'-2"	10'-3"	12,305						
NC8402	MCE	8'-4 3/4"	14'-2"	10'-3"	12,283	N/A	200 - 575		Galv. Carbon Steel	2.00	Interpolated
TQ8402	MLE	8'-4 3/4"	14'-2"	10'-3"	12,351	14// \	200 070	/ Stainless Steel	/ Stainless Steel	2.00	micronated
	NAE	8'-4 3/4"	14'-2"	10'-3"	12,194						
	NCE	8'-4 3/4"	14'-2"	10'-3"	12,311						
	NLE	8'-4 3/4"	14'-2"	10'-3"	12,403						
	PAE	8'-4 3/4"	14'-2"	10'-3"	12,306						
	PCE	8'-4 3/4"	14'-2"	10'-3"	12,284						
	PLE	8'-4 3/4"	14'-2"	10'-3"	12,352						
	QAE	8'-4 3/4"	14'-2"	10'-3"	12,339						
	QCE	8'-4 3/4"	14'-2"	10'-3"	12,351						
	QLE	8'-4 3/4"	14'-2"	10'-3"	12,339						

Unit Size	Fan, Sound and Certification	Unit Length	Unit Width	Unit Height	Operating Weight per Cell [lbs]		Voltage	Primary Structure Material		S _{DS} z/h=0 [g]	UUT
	HAE	9'-10 3/4"	19'-11"	11'-11 1/4"	18,774						
	HCE	9'-10 3/4"	19'-11"	11'-11 1/4"	18,920						
	HLE	9'-10 3/4"	19'-11"		18,891						
	KAE	9'-10 3/4"	19'-11"	11'-11 1/4"	18,892	RCOD	FO				
	KCE	8'-4 3/4"	18'-2"	11'-11 1/4"	18,774		E CON				
	KLE	8'-4 3/4"	18'-2"	11'-11 1/4"	18,865			0,			
	MAE	9'-10 3/4"	19'-11"		18,825	СШІ					
	MCE	8'-4 3/4"	18'-2"	11'-11 1/4"	18,891	J111		1			
	MLE	8'-4 3/4"	18'-2"	11'- <mark>11/1/4</mark> "	18,959						
	NAE	8'-4 3/4"	18'-2"	11' <mark>-11 1</mark> /4"	18,825	SP-01	/1	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\			
	NCE	8'-4 3/4"	18'-2"	11 <mark>'-11 1</mark> /4"	18,920		AAAAXXYVVVVVVAAAXXX	<u> </u>			
	NLE	8'-4 3/4"	18'-2"	1 <mark>1'-11</mark> 1/4"	18,825	othy I	Pilano				
NC8403	PAE	8'-4 3/4"	18'-2"	1 <mark>1'-11</mark> 1/4"	18,915	N/A	200 - 575		Galv. Carbon Steel	2.00	Interpolated
TQ8403	PCE	8'-4 3/4"	18'-2"	1 <mark>1'-11</mark> 1/4"	18,892	IN/A	200 - 373	/ Stai <mark>nless</mark> Steel	/ Stainless Steel	2.00	Interpolated
	PLE	8'-4 3/4"	18'-2"	11 <mark>'-11 1</mark> /4"	18,960	2/08/2	2021				
	QAE	8'-4 3/4"	18'-2"	11'- <mark>11 1/4</mark> "	18,948	00000	//////////////////////////////////////				
	QCE	8'-4 3/4"	18'-2"	11'-11 1/4"	18,925			16'			
	QLE	8'-4 3/4"	18'-2"	11'-11 <mark>1/4</mark> "	18,971			~~			
	RAE	8'-4 3/4"	18'-2"	11'-11 1/4"	19,057			K',			
	RCE	8'-4 3/4"	18'-2"	11'-11 1/4"	19,034	mm. Min	ING CO				
	RLE	8'-4 3/4"	18'-2"	11'-11 1/4"	19,126	ח ווש	ING				
	SAE	8'-4 3/4"	18'-2"	11'-11 1/4"	19,114						
	SCE	8'-4 3/4"	18'-2"	11'-11 1/4"	19,068						
	SLE	8'-4 3/4"	18'-2"	11'-11 1/4"	19,137						
	TAE	8'-4 3/4"	18'-2"	11'-11 1/4"	19,257						
	TLE	8'-4 3/4"	18'-2"	11'-11 1/4"	19,280						

Unit Size	Fan, Sound and Certification	Unit Length	Unit Width	Unit Height	Operating Weight per Cell [lbs]	Tested Weight [lbs]	Voltage	Primary Structure Material	Hot / Cold Water Basin Material	S _{DS} z/h=0 [g]	UUT
	HAE	9'-10 3/4"	19'-11"	11'-11 1/4"							
	HCE	9'-10 3/4"	19'-11"	11'-11 1/4"	23,660						
	HLE	9'-10 3/4"	19'-11"	11'-11 1/4"	23,507						
	KAE	9'-10 3/4"	19'-11"	11'-11 1/4"	23,517	COD	ECOM				
	KCE	9'-10 3/4"	19'-11"	11'-11 1/4"	23,272		E CON				
	KLE	9'-10 3/4"	19'-11"	11'-11 1/4"	23,154			0,			
	MAE	9'-10 3/4"	19'-11"	11'-11 <u>1/4"</u>	23,301	СШІ					
	MCE	9'-10 3/4"	19'-11"	11'-11 1/4"	23,273	DHI		7			
	MLE	9'-10 3/4"	19'-11"	11'-11/1/4"	23,306						
	NAE	9'-10 3/4"	19'-11"	11'-11 1/4"	23,550	SP-01	71	(m)			
	NCE	9'-10 3/4"	19'-11"	11 <mark>'-11 1</mark> /4"	23,581		AAAXXXYYVVVAAAAXXX	<u>yy</u>			
	NLE	9'-10 3/4"	19'-11"	1 <mark>1'-11</mark> 1/4"	23,581	othy. I	Dilana				
	PAE	9'-10 3/4"	19'-11"	1 <mark>1'-11 1</mark> /4"	23,649	othy J	Piland				
	PCE	9'-10 3/4"	19'-11"	1 <mark>1'-11 1</mark> /4"	23,680						
NC8405	PLE	9'-10 3/4"	19'-11"	11 <mark>'-11 1</mark> /4"	23,712	2/0,8/2	200 - 575	Galv. Carbon Steel	Galv. Carbon Steel	2.00	Interpolated
TQ8405	QAE	9'-10 3/4"	19'-11"	11'-11 1/4"	23,555	IN/A	200 - 373	/ St <mark>ainles</mark> s Steel	/ Stainless Steel	2.00	interpolated
	QCE	9'-10 3/4"	19'-11"	11'- <mark>11 1/4</mark> "	23,809	*		(5)			
	QLE	9'-10 3/4"	19'-11"	11'-11 1/4"	23,618			~~			
	RAE	9'-10 3/4"	19'-11"	11'-11 1/4"	23,665			K.			
	RCE	9'-10 3/4"	19'-11"	11'-11 1/4"	23,852	min (1) Lim	NG CO				
	RLE	9'-10 3/4"	19'-11"	11'-11 1/4"	23,859	מ ווש	ING				
	SAE	9'-10 3/4"	19'-11"	11'-11 1/4"	23,699						
	SCE	9'-10 3/4"	19'-11"	11'-11 1/4"	23,914						
	SLE	9'-10 3/4"		11'-11 1/4"	,						
	TAE	9'-10 3/4"		11'-11 1/4"							
	TCE	9'-10 3/4"	19'-11"	11'-11 1/4"	24,017						
	TLE	9'-10 3/4"	19'-11"	11'-11 1/4"	24,049						
	UAE	9'-10 3/4"	19'-11"	11'-11 1/4"	23,415						
	UCE	9'-10 3/4"	19'-11"	11'-11 1/4"	23,550						
	ULE	9'-10 3/4"	19'-11"	11'-11 1/4"	23,449						

Unit Size	Fan, Sound and Certification	Unit Length	Unit Width	Unit Height	Operating Weight per Cell [lbs]		Voltage	Primary Structure Material	-	S _{DS} z/h=0 [g]	UUT
	KAE	11'-10 3/4"	21'-0"	11'-11 3/4"	28,779						
	KCE	11'-10 3/4"	21'-0"	11'-11 3/4"	29,097						
	KLE	11'-10 3/4"	21'-0"	11'-11 3/4"	28,866						
	MAE	11'-10 3/4"	21'-0"	11'-11 3/4"	28,969	con	ECON				
	MCE	11'-10 3/4"	21'-0"	11'-11 1/4"	28,716		E CON				
	MLE	11'-10 3/4"	21'-0"	11'-11 3/4"	28,831			0,			
	NAE	11'-10 3/4"	21'-0"	11'-11 <mark>3/4"</mark>	28,501	CLLI		OLIANCE			
	NCE	11'-10 3/4"	21'-0"	11'-11 1/4"	28,745	D111		1			
	NLE	11'-10 3/4"	21'-0"	11'- <mark>11 3/4</mark> "	28,983		74				
	PAE	11'-10 3/4"	21'-0"	11'-11 3/4"	28,600	SP-01	/1	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\			
	PCE	11'-10 3/4"	21'-0"	11 <mark>'-11 1</mark> /4"	28,844			<u> </u>			
	PLE	11'-10 3/4"	21'-0"	1 <mark>1'-11</mark> 3/4"	29,020	othy I	Pilano				
	QAE	11'-10 3/4"	21'-0"	1 <mark>1'-11</mark> 3/4"	28,772	othy J					
	QCE	11'-10 3/4"	21'-0"	1 <mark>1'-11</mark> 1/4"	28,887	7.0.00000000000000000000000000000000000					
	QLE	11'-10 3/4"	21'-0"	11 <mark>'-11 3</mark> /4"	29,125	2/08/2	2021				
NC8407	RAE	11'-10 3/4"	21'-0"	11'- <mark>11 3/4</mark> "	29,036	N/A	200 - 575		Galv. Carbon Steel	2.00	Interpolated
TQ8407	RCE	11'-10 3/4"	21'-0"	11'-11 1/4"	29,016		200 - 070	/ Stainless Steel	/ Stainless Steel	2.00	micipolated
	RLE	11'-10 3/4"	21'-0"	11'-11 3/4"	29,192			~ ~ /			
	SAE	11'-10 3/4"	21'-0"	11'-11 3 <mark>/4"</mark>	29,070			K.,			
	SCE	11'-10 3/4"	21'-0"	11'-11 1/4"	29,078	······································	CO				
	SLE	11'-10 3/4"	21'-0"	11'-11 3/4"	29,254	ם ווש	ING CO				
	TAE	11'-10 3/4"	21'-0"	11'-11 3/4"	29,213						
	TCE	11'-10 3/4"	21'-0"	11'-11 3/4"	28,728						
	TCE	11'-10 3/4"	21'-0"	11'-11 1/4"	29,372						
	TLE	11'-10 3/4"	21'-0"	11'-11 3/4"	29,275						
	UAE	11'-10 3/4"	21'-0"	11'-11 3/4"	29,227						
	UCE	11'-10 3/4"	21'-0"	11'-11 3/4"	28,834						
	ULE	11'-10 3/4"	21'-0"	11'-11 3/4"	28,937						
	ULE	11'-10 3/4"	21'-0"	11'-11 3/4"	29,289						
	VAE	11'-10 3/4"	21'-0"	11'-11 3/4"	29,573						
	VCE	11'-10 3/4"	21'-0"	11'-11 3/4"	28,831						
	VLE	11'-10 3/4"	21'-0"	11'-11 3/4"	29,635						

Unit Size	Fan, Sound and Certification	Unit Length	Unit Width	Unit Height	Operating Weight per Cell [lbs]	Tested Weight [lbs]	Voltage	Primary Structure Material	,	S _{DS} z/h=0 [g]	UUT
	MAE	13'-10 3/4"	22'-5"	11'-11 3/4"	34,739						
	MCE	13'-10 3/4"	22'-5"	11'-11 3/4"	34,864						
	MLE	13'-10 3/4"	22'-5"	11'-11 3/4"	34,773						
	NAE	13'-10 3/4"	22'-5"	11'-11 3/4"	34,916	COD	ECON				
	NCE	13'-10 3/4"	22'-5"	11'-11 3/4"	34,879		- COV				
	NLE	13'-10 3/4"	22'-5"	11'-11 3/4"	34,777			0,			
	PAE	13'-10 3/4"	22'-5"	11'-11 3/4"	34,931	СШІ		1/2			
	PCE	13'-10 3/4"	22'-5"	11'-11 1/4"	34,619	D111		1			
	PLE	13'-10 3/4"	22'-5"	11'-11 3/4"	34,864		74				
	QAE	13'-10 3/4"	22'-5"	11'-11 3/4"	35,276	SP-01	/1				
	QCE	13'-10 3/4"	22'-5"	11 <mark>'-11 1</mark> /4"	34,663		AAAXXXYVAAAAAAXXX	<u> </u>			
	QLE	13'-10 3/4"	22'-5"	1 <mark>1'-11</mark> 3/4"	34,777	othy J	Pilano	Galv. Carbon Steel / Stainless Steel / Stainless Steel			
	RAE	13'-10 3/4"	22'-5"	1 <mark>1'-11</mark> 3/4"	34,739	Oury 3	Папс				
	RCE	13'-10 3/4"	22'-5"	1 <mark>1'-11 1</mark> /4"	34,791	A					
NC8409	RLE	13'-10 3/4"	22'-5"	11 <mark>'-11 3</mark> /4"	34,879	2/0,8/2	200 - 575		2.00	Interpolated	
TQ8409	SAE	13'-10 3/4"	22'-5"	11'- <mark>11 3/4</mark> "	34,773	IN/A	200 - 373		/ Stainless Steel	2.00	i interpolated
	SCE	13'-10 3/4"	22'-5"	11'- <mark>11 1/4</mark> "	34,853						
	SLE	13'-10 3/4"	22'-5"	11'-11 3/4"	34,783			~ ~ /			
	TAE	13'-10 3/4"	22'-5"	11'-11 3/4"	34,916			K. /			
	TCE	13'-10 3/4"	22'-5"	11'-11 1/4"	35,147	······································	CO				
	TLE	13'-10 3/4"	22'-5"	11'-11 3/4"	35,333	BUILD	NG CO				
	UAE	13'-10 3/4"	22'-5"	11'-11 3/4"	34,931						
	UCE	13'-10 3/4"	22'-5"	11'-11 1/4"	35,230						
	ULE	13'-10 3/4"	22'-5"	11'-11 3/4"	35,415						
	VAE	13'-10 3/4"	22'-5"	11'-11 3/4"	35,276						
	VCE	13'-10 3/4"	22'-5"	11'-11 1/4"	35,376						
	VLE	13'-10 3/4"	22'-5"	11'-11 3/4"	35,561						
	WAE	13'-10 3/4"	22'-5"	11'-11 3/4"	34,783]				
	WCE	13'-10 3/4"	22'-5"	11'-11 3/4"	34,619						
	WLE	13'-10 3/4"	22'-5"	11'-11 3/4"	35,333						

Unit Size	Fan, Sound and Certification	Unit Length	Unit Width	Unit Height	Operating Weight per Cell [lbs]		Voltage	Primary Structure Material	-	S _{DS} z/h=0 [g]	UUT
	NAE	11'-10 3/4"	22'-5"	18'-10"	47,172						
	NCE	11'-10 3/4"	22'-5"	18'-10"	46,548						
	NLE	11'-10 3/4"	22'-5"	18'-10"	46,419						
	PAE	11'-10 3/4"	22'-5"	18'-10"	47,318	COD	ECOM				
	PCE	11'-10 3/4"	22'-5"	18'-10"	46,904		E CON				
	PLE	11'-10 3/4"	22'-5"	18'-10"	46,610			0,			
	QAE	11'-10 3/4"	22'-5"	18'-10"	46,986	СШІ		OLIANOCE			
	QCE	11'-10 3/4"	22'-5"	18'- <mark>10"</mark>	46,401	3111		7/			
	QLE	11'-10 3/4"	22'-5"	18 <mark>'-10"</mark>	46,430						
	RAE	11'-10 3/4"	22'-5"	18'-10"	47,132	SP-01	/1	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\			
	RCE	11'-10 3/4"	22'-5"	18'-10"	46,444		AAAAAAAAAAAAAAAA				
	RLE	11'-10 3/4"	22'-5"	<mark>18'-1</mark> 0"	46,690	othy J	Pilano				
NC8411	SAE	11'-10 3/4"	22'-5"	18'-10"	46,580			Galy Carbon Stool	Galv. Carbon Steel		
TQ8411	SCE	11'-10 3/4"	22'-5"	18'-10"	46,506	N/A	200 - 575	/ Stainless Steel	/ Stainless Steel	2.00	Interpolated
1 00711	SLE	11'-10 3/4"	22'-5"	18'-10"	46,686	2/08/2	2021	7 Otaliliess Oteci	/ Otalilioss Otoci		
	TAE	11'-10 3/4"	22'-5"	18'-10"	46,580						
	TCE	11'-10 3/4"	22'-5"	18'-10"	46,799	*					
	TLE	11'-10 3/4"	22'-5"	18'- <mark>10"</mark>	46,580						
	UAE	11'-10 3/4"	22'-5"	18'-10"	46,594			K.			
	UCE	11'-10 3/4"	22'-5"	18'-10"	46,882	Jum Win	ING CO				
	ULE	11'-10 3/4"	22'-5"	18'-10"	47,062	ם ווש	ING				
	VAE	11'-10 3/4"	22'-5"	18'-10"	47,005	OILD					
	VCE	11'-10 3/4"	22'-5"	18'-10"	47,028						
	VLE	11'-10 3/4"	22'-5"	18'-10"	47,275						
	WAE	11'-10 3/4"	22'-5"	18'-10"	47,058						
	WCE	11'-10 3/4"	22'-5"	18'-10"	47,076						
	WLE	11'-10 3/4"	22'-5"	18'-10"	47,388						

Unit Size	Fan, Sound and Certification	Unit Length	Unit Width	Unit Height	Operating Weight per Cell [lbs]	_	Voltage	Primary Structure Material	-	S _{DS} z/h=0 [g]	UUT
	PAE	13'-10 3/4"	22'-5"	18'-10"	52,584						
	PCE	13'-10 3/4"	22'-5"	18'-10"	52,480						
	PLE	13'-10 3/4"	22'-5"	18'-10"	52,584						
	QAE	13'-10 3/4"	22'-5"	18'-10"	52,627	con	ECON				
	QCE	13'-10 3/4"	22'-5"	18'-10"	52,523		- CON				
	QLE	13'-10 3/4"	22'-5"	18'-10"	52,697			OLIANCE			
	RAE	13'-10 3/4"	22'-5"	18'-10"	52,599	СШІ					
	RCE	13'-10 3/4"	22'-5"	18'-10"	52,652	D111		1			
	RLE	13'-10 3/4"	22'-5"	18 <mark>'-10"</mark>	52,756		— 4				
	SAE	13'-10 3/4"	22'-5"	1 <mark>8'-10</mark> "	52,633	SP-01	/1	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\			
	SCE	13'-10 3/4"	22'-5"	<mark>18'-10</mark> "	52,714				Galv. Carbon Steel		
	SLE	13'-10 3/4"	22'-5"	<mark>18'-1</mark> 0"	52,818	othy J	Pilano				
NC8412	TAE	13'-10 3/4"	22'-5"	18'-10"	52,777						
TQ8412	TCE	13'-10 3/4"	22'-5"	18'-10"	53,007	N/A	200 - 575	/ Stainless Steel	/ Stainless Steel	2.00	Interpolated
1 Q0412	TLE	13'-10 3/4"	22'-5"	1 <mark>8'-10</mark> "	53,112	2/08/2	2021	/ Stainless Steel	/ Stairliess Steel		
	UAE	13'-10 3/4"	22'-5"	18'-10"	52,791	111111111111111111111111111111111111111					
	UCE	13'-10 3/4"	22'-5"	18'-10"	53,090	*					
	ULE	13'-10 3/4"	22'-5"	18'-10"	53,264			1			
	VAE	13'-10 3/4"	22'-5"	18'-10"	53,136			K.			
	VCE	13'-10 3/4"	22'-5"	18'-10"	53,236	Maria Maria	ING CO				
	VLE	13'-10 3/4"	22'-5"	18'-10"	53,411	ח ווש	ING				
	WAE	13'-10 3/4"	22'-5"	18'-10"	53,260						
	WCE	13'-10 3/4"	22'-5"	18'-10"	53,580						
	WLE	13'-10 3/4"	22'-5"	18'-10"	53,458						
	XAE	13'-10 3/4"	22'-5"	18'-10"	53,955						
	XCE	13'-10 3/4"	22'-5"	18'-10"	53,856						
	XLE	13'-10 3/4"	22'-5"	18'-10"	54,094]					

Unit Size	Fan, Sound and Certification	Unit Length	Unit Width	Unit Height	Operating Weight per Cell [lbs]		Voltage	Primary Structure Material	-	S _{DS} z/h=0 [g]	UUT
	NAE	11'-10 3/4"	22'-5"	22'-7 3/16"	51,468						
	NLE	11'-10 3/4"	22'-5"	22'-7 3/16"	51,679						
	PAE	11'-10 3/4"	22'-5"	22'-7 3/16"	51,632						
	PLE	11'-10 3/4"	22'-5"	22'-7 3/16"	51,632	con	ECOM				
	QAE	11'-10 3/4"	22'-5"	22'-7 3/16"	51,473	COD	E CON				
	QCE	11'-10 3/4"	22'-5"	22'-7 3/16"	51,580			OLIANOCE			
	QLE	11'-10 3/4"	22'-5"	22'-7 3/16"	51,741	CILI					
	RAE	11'-10 3/4"	22'-5"	22'-7 3/16"	51,647	DIII		7			
	RCE	11'-10 3/4"	22'-5"	22'-7 3/16"	51,623						
	RLE	11'-10 3/4"	22'-5"	22'-7 3/16"	51,647	SP-01	71	(m)			
	SAE	11'-10 3/4"	22'-5"	22'-7 3/16"	51,681		TAAXXYYYYYAAAAAXXX	<u>ww</u>			
	SCE	11'-10 3/4"	22'-5"	22'-7 3/16"	51,685	othy I	Dilono				
	SLE	11'-10 3/4"	22'-5"	2 <mark>2'-7 3</mark> /16"	51,866	othy J	Piland				
NC8413	TAE	11'-10 3/4"	22'-5"	22'-7 3/16"	51,825	N/A	200 - 575	Galv. Carbon Steel	Galv. Carbon Steel	2.00	Interpolated
TQ8413	TCE	11'-10 3/4"	22'-5"	22'-7 3/16"	51,979	2/08/2	200 - 373	/ Stai <mark>nless</mark> Steel	/ Stainless Steel	2.00	Interpolated
	TLE	11'-10 3/4"	22'-5"	22'-7 3/16"	52,226	1111/1/1111					
	UAE	11'-10 3/4"	22'-5"	22'-7 3/16"	51,839	*		(5)			
	UCE	11'-10 3/4"	22'-5"	22'-7 3/16"	52,062						
	ULE	11'-10 3/4"	22'-5"	22'-7 3/16"	51,839			K.			
	VAE	11'-10 3/4"	22'-5"	22'-7 3/16"	52,184	Maria Maria	CO				
	VCE	11'-10 3/4"	22'-5"	22'-7 3/16"	52,208	ח ווש	ING CO				
	VLE	11'-10 3/4"	22'-5"	22'-7 3/16"	52,388						
	WAE	11'-10 3/4"	22'-5"	22'-7 3/16"	52,238						
	WCE	11'-10 3/4"	22'-5"	22'-7 3/16"	52,255						
	WLE	11'-10 3/4"	22'-5"	22'-7 3/16"	52,502						
	XAE	11'-10 3/4"	22'-5"	22'-7 3/16"	52,999						
	XCE	11'-10 3/4"	22'-5"	22'-7 3/16"	52,822						
	XLE	11'-10 3/4"	22'-5"	22'-7 3/16"	52,999						

Unit Size	Fan, Sound and Certification	Unit Length	Unit Width	Unit Height	Operating Weight per Cell [lbs]		Voltage	Primary Structure Material		S _{DS} z/h=0 [g]	UUT
	WLE	13'-10 3/4"	22'-5"	22'-7 3/16"	53,156	53,156		Galv. Carbon Steel	Galv. Carbon Steel	2.00	2A
	WLE	13'-10 3/4"	22'-5"	22'-7 3/16"	54,762						
	PAE	13'-10 3/4"	22'-5"	22'-7 3/16"	53,914						
	PLE	13'-10 3/4"	22'-5"	22'-7 3/16"	54,065	COD	ECON				
	QAE	13'-10 3/4"	22'-5"	22'-7 3/16"	54,024		- CON				
	QCE	13'-10 3/4"	22'-5"	22'-7 3/16"	53,855		17,	OLIANOCE			
	QLE	13'-10 3/4"	22'-5"	22'-7 3/16"	54,092	СШІ	חכ	4			
	RAE	13'-10 3/4"	22'-5"	22'-7 3/16"	54,081			Ny L			
	RCE	13'-10 3/4"	22'-5"	22'-7 3/16"	53,980		74				
	RLE	13'-10 3/4"	22'-5"	22'-7 3/16"	54,149	SP-01	/1	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\			
	SAE	13'-10 3/4"	22'-5"	22'-7 3/16"	53,962			<u> </u>			
	SCE	13'-10 3/4"	22'-5"	2 <mark>2'-7 3</mark> /16"	54,040	othy I	Pilano				
	SLE	13'-10 3/4"	22'-5"	2 <mark>2'-7 3</mark> /16"	54,483	Dury J	riianic				
	TAE	13'-10 3/4"	22'-5"	2 <mark>2'-7 3</mark> /16"	54,169						
NC8414		13'-10 3/4"	22'-5"	22'-7 3/16"	54,325	2/0/8/2	200 - 575		Galv. Carbon Steel	2.00	Interpolated
TQ8414		13'-10 3/4"	22'-5"	22'-7 3/16"	54,494		200 - 070	/ St <mark>ainles</mark> s Steel	/ Stainless Steel	2.00	Interpolated
	UAE	13'-10 3/4"	22'-5"	22'-7 3/16"	54,183			6			
	UCE	13'-10 3/4"	22'-5"	22'-7 3/16"	54,405			\ \V \			
	ULE	13'-10 3/4"	22'-5"	22'-7 3/16"	54,642			K.,			
	VAE	13'-10 3/4"	22'-5"	22'-7 3/16"	54,450	Trim (LL) in	ING CO				
	VAE	13'-10 3/4"	22'-5"	22'-7 3/16"	54,450	BUILD	ING				
	VCE	13'-10 3/4"	22'-5"	22'-7 3/16"	54,547						
	VLE	13'-10 3/4"	22'-5"	22'-7 3/16"	54,784						
	WAE	13'-10 3/4"	22'-5"	22'-7 3/16"	54,570						
	WAE	13'-10 3/4"	22'-5"	22'-7 3/16"	54,570						
	WLE	13'-10 3/4"	22'-5"	22'-7 3/16"	54,762]					
	XAE	13'-10 3/4"	22'-5"	22'-7 3/16"	54,880]					
	XCE	13'-10 3/4"	22'-5"	22'-7 3/16"	54,880]					
	XLE	13'-10 3/4"	22'-5"	22'-7 3/16"	54,880						
	WCE	13'-10 3/4"	22'-5"	22'-7 3/16"	54,880	54,880		Galv. Carbon Steel	Galv. Carbon Steel	2.00	4A

Table 1b: Certified Cooling Tower Models - Isolated Mounting

Certification	2.00	UUT Interpolated
HAE 6'-6 1/4" 12'-10" 10'-2 1/2" 8,697 HLE 6'-6 1/4" 12'-10" 10'-2 1/2" 8,737 KAE 6'-6 1/4" 12'-10" 10'-2 1/2" 8,660 KLE 6'-6 1/4" 12'-10" 10'-2 1/2" 8,700 MAE 6'-6 1/4" 12'-10" 10'-2 1/2" 8,738 NC8401 TQ8401 NAE 6'-6 1/4" 12'-10" 10'-2 1/2" 8,362 NCE 6'-6 1/4" 12'-10" 10'-2 1/2" 9,000 NCE 6'-6 1/4" 12'-10" 9'-9" 9,000 NCE 6'-6 1/4" 12'-10" 9'-9" 9,000 NCE 6'-6 1/4" 12'-10" 10'-2 1/2" 8,768	2.00	Interpolated
HLE	2.00	Interpolated
KAE 6'-6 1/4" 12'-10" 10'-2 1/2" 8,660 N/A KLE 6'-6 1/4" 12'-10" 10'-2 1/2" 8,700 MAE 6'-6 1/4" 12'-10" 10'-2 1/2" 8,698 NC8401 MLE 6'-6 1/4" 12'-10" 10'-2 1/2" 8,362 NAE 6'-6 1/4" 12'-10" 10'-2 1/2" 8,362 N/A NCE 6'-6 1/4" 12'-10" 10'-2 1/2" 8,362 N/A NCE 6'-6 1/4" 12'-10" 10'-2 1/2" 9,000 NIE 6'-6 1/4" 12'-10" 9'-9" 9,000 9,000 NIE 6'-6 1/4" 12'-10" 10'-2 1/2" 8,768 Stainless Steel Stainless Steel 2,200 - 575 Stainless Steel Galv. Carbon Steel Galv. Carbon Steel Car	2.00	Interpolated
NC8401 NAE 6'-6 1/4" 12'-10" 10'-2 1/2" 8,660 N/A NC8401 NAE 6'-6 1/4" 12'-10" 10'-2 1/2" 8,698 NAE 6'-6 1/4" 12'-10" 10'-2 1/2" 8,362 8,362 NAE 6'-6 1/4" 12'-10" 10'-2 1/2" 8,362 N/A NCE 6'-6 1/4" 12'-10" 10'-2 1/2" 8,362 N/A NCE 6'-6 1/4" 12'-10" 10'-2 1/2" 9,000 NCE 6'-6 1/4" 12'-10" 9'-9" 9,000 9,000 NCE 6'-6 1/4" 12'-10" 10'-2 1/2" 8,368 NCE 6'-6 1/4" 12'-10" 10'-2 1/2" 8,362 NCE 6'-6 1/4" 12'-10" 10'-2 1/2" 8,362 NCE 6'-6 1/4" 12'-10" 10'-2 1/2" 8,368 NCE 6'-6 1/4" 12'-10" 10'-2 1/2" 8,362 NCE 6'	2.00	Interpolated
NC8401 MAE 6'-6 1/4" 12'-10" 10'-2 1/2" 8,698 NC8401 MLE 6'-6 1/4" 12'-10" 10'-2 1/2" 8,738 TQ8401 NAE 6'-6 1/4" 12'-10" 10'-2 1/2" 8,362 NAE 6'-6 1/4" 12'-10" 10'-2 1/2" 8,362 NCE 6'-6 1/4" 12'-10" 10'-2 1/2" 9,000 NCE 6'-6 1/4" 12'-10" 10'-2 1/2" 9,000 NCE 6'-6 1/4" 12'-10" 9'-9" 9,000 9,000 NI F 6'-6 1/4" 12'-10" 10'-2 1/2" 8,768		
NC8401 MLE 6'-6 1/4" 12'-10" 10'-2 1/2" 8,738 TQ8401 NAE 6'-6 1/4" 12'-10" 10'-2 1/2" 8,362 8,362 NAE 6'-6 1/4" 12'-10" 10'-2 1/2" 8,362 N/A NCE 6'-6 1/4" 12'-10" 10'-2 1/2" 9,000 NCE 6'-6 1/4" 12'-10" 9'-9" 9,000 9,000 NI F 6'-6 1/4" 12'-10" 10'-2 1/2" 8,768		
TQ8401 NAE 6'-6 1/4" 12'-10" 10'-2 1/2" 8,362 8,362 NAE 6'-6 1/4" 12'-10" 10'-2 1/2" 8,362 N/A NCE 6'-6 1/4" 12'-10" 10'-2 1/2" 9,000 NCE 6'-6 1/4" 12'-10" 9'-9" 9,000 9,000 NI F 6'-6 1/4" 12'-10" 10'-2 1/2" 8,768		
NAE 6'-6 1/4" 12'-10" 10'-2 1/2" 8,362 8,362		
NCE 6'-6 1/4" 12'-10" 10'-2 1/2" 9,000 N/A NCE 6'-6 1/4" 12'-10" 9'-9" 9,000 9,000 NI F 6'-6 1/4" 12'-10" 10'-2 1/2" 8 768 NI F 6'-6 1/4" 12'-10" 10'-2 1/2" 8 768	2.00	1B
NCE 6'-6 1/4" 12'-10" 10'-2 1/2" 9,000 75 tainless Steel 7 Stainless Steel 8 Stainless Steel 9 Stainle	2.00	Interpolated
NI F 6'-6 1/4" 12'-10" 10'-2 1/2" 8 768	2.00	Interpolated
NLF 6'-6 1/4" 12'-10" 10'-2 1/2" 8 768	2.00	3B
Galv. Carbon Steel Galv. Carbon Steel		
PAE 6'-6 1/4" 12'-10" 10'-2 1/2" 8,837 N/A Piland / Stainless Steel / Stainless Steel / Stainless Steel	2.00	Interpolated
PLE 6'-6 1/4" 12'-10" 10'-2 1/2" 8,897		
GCE 8'-4 3/4" 14'-2" 10'-3" 12,152		
GLE 8'-4 3/4" 14'-2" 10'-3" 12,243 02/08/2021		
HAE 8'-4 3/4" 14'-2" 10'-3" 12,207		
HCE 8'-4 3/4" 14'-2" 10'-3" 12,139		
HLE 8'-4 3/4" 14'-2" 10'-3" 12,207		
KAE 8'-4 3/4" 14'-2" 10'-3" 12,306		
KCE 8'-4 3/4" 14'-2" 10'-3" 12,165		
KCE 8'-4 3/4" 14'-2" 10'-3" 12,165 KLE 8'-4 3/4" 14'-2" 10'-3" 12,257 MAE 8'-4 3/4" 14'-2" 10'-3" 12 305		
MAE 8'-4 3/4" 14'-2" 10'-3" 12,305		
NC8402 MCE 8'-4 3/4" 14'-2" 10'-3" 12,283 N/A 200 - 575 Galv. Carbon Steel Galv. Carbon Steel	2.00	Interpolated
TQ8402 MLE 8'-4 3/4" 14'-2" 10'-3" 12,351 N/A 200 - 575 / Stainless Steel / Stainles	2.00	Interpolated
NAE 8'-4 3/4" 14'-2" 10'-3" 12,194		
NCE 8'-4 3/4" 14'-2" 10'-3" 12,311		
NLE 8'-4 3/4" 14'-2" 10'-3" 12,403		
PAE 8'-4 3/4" 14'-2" 10'-3" 12,306		
PCE 8'-4 3/4" 14'-2" 10'-3" 12,284		
PLE 8'-4 3/4" 14'-2" 10'-3" 12,352		
QAE 8'-4 3/4" 14'-2" 10'-3" 12,339		
QCE 8'-4 3/4" 14'-2" 10'-3" 12,351	1	
QLE 8'-4 3/4" 14'-2" 10'-3" 12,339	•	

Table 1b: Certified Cooling Tower Models - Isolated Mounting (Continued)

Unit Size	Fan, Sound and Certification	Unit Length	Unit Width	Unit Height	Operating Weight per Cell [lbs]	Tested Weight [lbs]	Voltage	Primary Structure Material	Hot / Cold Water Basin Material	S _{DS} z/h=1 [g]	UUT
	HAE	9'-10 3/4"	19'-11"		· · · · · · · · · · · · · · · · · · ·						
	HCE	9'-10 3/4"	19'-11"	11'-11 1/4"	18,920						
	HLE	9'-10 3/4"	19'-11"	11'-11 1/4"	18,891						
	KAE	9'-10 3/4"	19'-11"	11'-11 1/4"	18,892						
	KCE	8'-4 3/4"	18'-2"	11'-11 1/4"	18,774	R COD	ECON				
	KLE	8'-4 3/4"	18'-2"	11'-11 1/4"	18,865	and the state of t	COM				
	MAE	9'-10 3/4"	19'-11"	11'-11 1/4"	18,825			9			
	MCE	8'-4 3/4"	18'-2"	11'-11 1/4"	18,891	CHI		OLIANCE			
	MLE	8'-4 3/4"	18'-2"	11'-11_1/4"	18,959	9111		12			
	NAE	8'-4 3/4"	18'-2"	11'- <mark>11'//4</mark> "	18,825	CD 0	74				
	NCE	8'-4 3/4"	18'-2"	11 <mark>'-11 1</mark> /4"	18,920	3P-U	/				
	NLE	8'-4 3/4"	18'-2"	1 <mark>1'-11 1</mark> /4"	18,825		AAAAXXYVAAAAXXX	<u> </u>			
NC8403	PAE	8'-4 3/4"	18'-2"	1 <mark>1'-11</mark> 1/4"	18,915	othwa J	200 - 575	Galv. Carbon Steel	Galv. Carbon Steel	2.00	Interpolated
TQ8403	PCE	8'-4 3/4"	18'-2"	1 <mark>1'-11</mark> 1/4"	18,892	D CIN/JA O	2001-07/3	/ Stai <mark>nless</mark> Steel	/ Stainless Steel	2.00	Interpolated
	PLE	8'-4 3/4"	18'-2"	1 <mark>1'-11</mark> 1/4"	18,960						
	QAE	8'-4 3/4"	18'-2"	11 <mark>'-11 1</mark> /4"	18,948	2/08/2	2021				
	QCE	8'-4 3/4"	18'-2"	11' <mark>-11 1/4</mark> "	18,925	111111111111111111111111111111111111111					
	QLE	8'-4 3/4"	18'-2"	11'-11 1/4"	18,971			6			
	RAE	8'-4 3/4"	18'-2"	11'-11 1/4"	19,057			· ~ /			
	RCE	8'-4 3/4"	18'-2"	11'-11 1/4"	19,034			K.,			
	RLE	8'-4 3/4"	18'-2"	11'-11 1/4"	19,126	-min (L. L. Lim	ING CO				
	SAE	8'-4 3/4"	18'-2"	11'-11 1/4"	19,114	BUILD	ING				
	SCE	8'-4 3/4"	18'-2"	11'-11 1/4"	19,068						
	SLE	8'-4 3/4"	18'-2"	11'-11 1/4"	19,137						
	TAE	8'-4 3/4"	18'-2"	11'-11 1/4"	19,257						
	TLE	8'-4 3/4"	18'-2"	11'-11 1/4"	19,280						

Table 1b: Certified Cooling Tower Models - Isolated Mounting (Continued)

Unit Size	Fan, Sound and Certification	Unit Length	Unit Width	Unit Height	Operating Weight per Cell [lbs]	Tested Weight [lbs]	Voltage	Primary Structure Material	Hot / Cold Water Basin Material	S _{DS} z/h=1 [g]	UUT
	HAE	9'-10 3/4"	19'-11"	11'-11 1/4"	23,638						
	HCE	9'-10 3/4"	19'-11"	11'-11 1/4"	23,660	1					
	HLE	9'-10 3/4"	19'-11"	11'-11 1/4"	23,507						
	KAE	9'-10 3/4"	19'-11"	11'-11 1/4"	23,517						
	KCE	9'-10 3/4"	19'-11"	11'-11 1/4"	23,272	R COD	FO				
	KLE	9'-10 3/4"	19'-11"	11'-11 1/4"	23,154	THE PERSON NAMED IN COLUMN TO THE PE					
	MAE	9'-10 3/4"	19'-11"	11'-11 1/4"	23,301			0			
	MCE	9'-10 3/4"	19'-11"	11'-11 1/4"	23,273	CLII		OLANOCE			
	MLE	9'-10 3/4"	19'-11"	11'-11 1/4"	23,306	91 I I		12			
	NAE	9'-10 3/4"	19'-11"	11'-11/1/4"	23,550	CD O	74				
	NCE	9'-10 3/4"	19'-11"	11'-11 1/4"	23,581	SP-0	/ 1				
	NLE	9'-10 3/4"	19'-11"	11'-11 1/4"	23,581		TAAXXYYYYYAAAAXXX	<u> </u>			
	PAE	9'-10 3/4"	19'-11"	11'-11 1/4"	23,649	othy J	Piland				
	PCE	9'-10 3/4"	19'-11"	1 <mark>1'-</mark> 11 1/4"	23,680	oury o	1 Harre				
NC8405	PLE	9'-10 3/4"	19'-11"	1 <mark>1'-11 1</mark> /4"	23,712	- NI/Δ -	200 - 575	Galv. Carbon Steel	Galv. Carbon Steel	2.00	Interpolated
TQ8405	QAE	9'-10 3/4"	19'-11"	11 <mark>'-11 1/</mark> 4"	23,555	2/V8/2	200 - 373	/ Stainless Steel	/ Stainless Steel	2.00	interpolated
	QCE	9'-10 3/4"	19'-11"	11'-11 1/4"	23,809	111111111111111111111111111111111111111					
	QLE	9'-10 3/4"	19'-11"	11'-11 1/4"	23,618			6			
	RAE	9'-10 3/4"	19'-11"	11'-11 1/4"	23,665			· ~/			
	RCE	9'-10 3/4"	19'-11"	11'-11 1 <mark>/4"</mark>	23,852			(K)			
	RLE	9'-10 3/4"	19'-11"	11'-11 1/4"	23,859	Marie La La Company	ING CO				
	SAE	9'-10 3/4"	19'-11"	11'-11 1/4"	23,699	BUILD	ING				
	SCE	9'-10 3/4"	19'-11"	11'-11 1/4"	23,914						
	SLE	9'-10 3/4"	19'-11"	11'-11 1/4"	23,946						
	TAE	9'-10 3/4"	19'-11"	11'-11 1/4"	24,177						
	TCE	9'-10 3/4"	19'-11"		24,017						
	TLE	9'-10 3/4"	19'-11"		24,049						
	UAE	9'-10 3/4"	19'-11"	11'-11 1/4"	23,415						
	UCE	9'-10 3/4"	19'-11"	11'-11 1/4"	23,550						
	ULE	9'-10 3/4"	19'-11"	11'-11 1/4"	23,449						

Unit Size	Fan, Sound and Certification	Unit Length	Unit Width	Unit Height	Operating Weight per Cell [lbs]	Tested Weight [lbs]	Voltage	Primary Structure Material	Hot / Cold Water Basin Material	S _{DS} z/h=1 [g]	UUT
	KAE	11'-10 3/4"	21'-0"	11'-11 3/4"	28,779						
	KCE	11'-10 3/4"	21'-0"	11'-11 3/4"	29,097						
	KLE	11'-10 3/4"	21'-0"	11'-11 3/4"	28,866						
	MAE	11'-10 3/4"	21'-0"	11'-11 3/4"	28,969		ECOM				
	MCE	11'-10 3/4"	21'-0"	11'-11 1/4"	28,716	RCOD	FC				
	MLE	11'-10 3/4"	21'-0"	11'-11 3/4"	28,831	and the state of t	COM				
	NAE	11'-10 3/4"	21'-0"	11'-11 3/4",	28,501			OLIANOCE STATE			
	NCE	11'-10 3/4"	21'-0"	11'-11 1/4"	28,745	CHI					
	NLE	11'-10 3/4"	21'-0"	11'-11 3/4"	28,983	9111		12			
	PAE	11'-10 3/4"	21'-0"	11'-11 3/4"	28,600	CD 0	74				
	PCE	11'-10 3/4"	21'-0"	11'-11 1/4"	28,844	SP-0	/				
	PLE	11'-10 3/4"	21'-0"	11'-11 3/4"	29,020			<u> </u>			
	QAE	11'-10 3/4"	21'-0"	11'-11 3/4"	28,772	othy J	Pilano				
	QCE	11'-10 3/4"	21'-0"	1 <mark>1'-11</mark> 1/4"	28,887	Ottry 0					
	QLE	11'-10 3/4"	21'-0"	11'-11 3/4"	29,125						
NC8407	RAE	11'-10 3/4"	21'-0"	11 <mark>'-11 3</mark> /4"	29,036	2/08/2	200 - 575	Galv. Carbon Steel	Galv. Carbon Steel	2.00	Interpolated
TQ8407	RCE	11'-10 3/4"	21'-0"	11'-11 1/4"	29,016	IN/A	200 - 373	/ St <mark>ainles</mark> s Steel	/ Stainless Steel	2.00	Interpolated
	RLE	11'-10 3/4"	21'-0"	11'-11 3/4"	29,192			16			
	SAE	11'-10 3/4"	21'-0"	11'-11 3/4"	29,070			· ~ /			
	SCE	11'-10 3/4"	21'-0"	11'-11 1/4"	29,078			K.,			
	SLE	11'-10 3/4"	21'-0"	11'-11 3/4"	29,254	www.ll.lim	ING CO				
	TAE	11'-10 3/4"	21'-0"	11'-11 3/4"	29,213	BUILD	ING				
	TCE	11'-10 3/4"	21'-0"	11'-11 3/4"	28,728						
	TCE	11'-10 3/4"	21'-0"	11'-11 1/4"	29,372						
	TLE	11'-10 3/4"	21'-0"	11'-11 3/4"	29,275	1					
	UAE	11'-10 3/4"	21'-0"	11'-11 3/4"	29,227						
	UCE	11'-10 3/4"	21'-0"	11'-11 3/4"	28,834						
	ULE	11'-10 3/4"	21'-0"	11'-11 3/4"	28,937						
	ULE	11'-10 3/4"	21'-0"	11'-11 3/4"	29,289]					
	VAE	11'-10 3/4"	21'-0"	11'-11 3/4"	29,573]					
	VCE	11'-10 3/4"	21'-0"	11'-11 3/4"	28,831						
	VLE	11'-10 3/4"	21'-0"	11'-11 3/4"	29,635						

Table 1b: Certified Cooling Tower Models - Isolated Mounting (Continued)

Unit Size	Fan, Sound and Certification	Unit Length	Unit Width	Unit Height	Operating Weight per Cell [lbs]	Tested Weight [lbs]	Voltage	Primary Structure Material	Hot / Cold Water Basin Material	S _{DS} z/h=1 [g]	UUT
	MAE	13'-10 3/4"	22'-5"	11'-11 3/4"	34,739						
	MCE	13'-10 3/4"	22'-5"	11'-11 3/4"	34,864	1					
	MLE	13'-10 3/4"	22'-5"	11'-11 3/4"	34,773						
	NAE	13'-10 3/4"	22'-5"	11'-11 3/4"	34,916						
	NCE	13'-10 3/4"	22'-5"	11'-11 3/4"	34,879	RCOD	FC	OL DACK			
	NLE	13'-10 3/4"	22'-5"	11'-11 3/4"	34,777	outer Committee	COM				
	PAE	13'-10 3/4"	22'-5"	11'-11 3/4"	34,931			9			
	PCE	13'-10 3/4"	22'-5"	11'-11 <mark>1/4</mark> "	34,619	CHI					
	PLE	13'-10 3/4"	22'-5"	11'-11 3/4"	34,864	9111		12			
	QAE	13'-10 3/4"	22'-5"	11'-11/3/4"	35,276	CD 0	74				
	QCE	13'-10 3/4"	22'-5"	11'-11 1/4"	34,663	3P-U	/				
	QLE	13'-10 3/4"	22'-5"	11 <mark>'-11 3</mark> /4"	34,777			<u> </u>			
	RAE	13'-10 3/4"	22'-5"	1 <mark>1'-11 3</mark> /4"	34,739	othy J	Piland				
	RCE	13'-10 3/4"	22'-5"	1 <mark>1'-11</mark> 1/4"	34,791	otily o	1 Harre				
NC8409	RLE	13'-10 3/4"	22'-5"	1 <mark>1'-11 3</mark> /4"	34,879	0/N/A/	200 575	Galv. Carbon Steel	Galv. Carbon Steel	2.00	Interpolated
TQ8409	SAE	13'-10 3/4"	22'-5"	11 <mark>'-11 3</mark> /4"	34,773	2/08/2	200 - 575	/ Sta <mark>inless</mark> Steel	/ Stainless Steel	2.00	interpolated
	SCE	13'-10 3/4"	22'-5"	11'- <mark>11 1/4</mark> "	34,853	111111111111111111111111111111111111111		T/0/			
	SLE	13'-10 3/4"	22'-5"	11'-11 3/4"	34,783			10			
	TAE	13'-10 3/4"	22'-5"	11'-11 3/4"	34,916			· \ \ /			
	TCE	13'-10 3/4"	22'-5"	11'-11 1 <mark>/4"</mark>	35,147			0K,			
	TLE	13'-10 3/4"	22'-5"	11'-11 3/4"	35,333	parity Main	ING CO				
	UAE	13'-10 3/4"	22'-5"	11'-11 3/4"	34,931	BUILD	ING				
	UCE	13'-10 3/4"	22'-5"	11'-11 1/4"	35,230						
	ULE	13'-10 3/4"	22'-5"	11'-11 3/4"	35,415						
	VAE	13'-10 3/4"	22'-5"	11'-11 3/4"	35,276						
	VCE	13'-10 3/4"	22'-5"	11'-11 1/4"	35,376						
	VLE	13'-10 3/4"	22'-5"	11'-11 3/4"	35,561						
	WAE	13'-10 3/4"	22'-5"	11'-11 3/4"	34,783						
	WCE	13'-10 3/4"	22'-5"	11'-11 3/4"	34,619						
	WLE	13'-10 3/4"	22'-5"	11'-11 3/4"	35,333						

Table 1b: Certified Cooling Tower Models - Isolated Mounting (Continued)

Unit Size	Fan, Sound and Certification	Unit Length	Unit Width	Unit Height	Operating Weight per Cell [lbs]	Tested Weight [lbs]	Voltage	Primary Structure Material	Hot / Cold Water Basin Material	S _{DS} z/h=1 [g]	UUT
	NAE	11'-10 3/4"	22'-5"	18'-10"	47,172						
	NCE	11'-10 3/4"	22'-5"	18'-10"	46,548						
	NLE	11'-10 3/4"	22'-5"	18'-10"	46,419						
	PAE	11'-10 3/4"	22'-5"	18'-10"	47,318			OL PACE			
	PCE	11'-10 3/4"	22'-5"	18'-10"	46,904	RCOD	FC				
	PLE	11'-10 3/4"	22'-5"	18'-10"	46,610	ore PERSONAL PROPERTY OF THE PERSON OF THE P	ON				
	QAE	11'-10 3/4"	22'-5"	18'-10"	46,986			9			
	QCE	11'-10 3/4"	22'-5"	18'-1 <mark>0</mark> "	46,401	CHI					
	QLE	11'-10 3/4"	22'-5"	18'-10"	46,430	91 I I		12			
	RAE	11'-10 3/4"	22'-5"	18 <mark>'-10"</mark>	47,132	SD 04	74				
	RCE	11'-10 3/4"	22'-5"	18'-10"	46,444	3F-U	/	[[[]] [] [] [] [] [] [] [] [
	RLE	11'-10 3/4"	22'-5"	18'-10"	46,690		ATTOCK EVEN AND A STATE OF THE	<u> </u>			
NC8411	SAE	11'-10 3/4"	22'-5"	<mark>18'-1</mark> 0"	46,580	othy .l	Pilano	Galy Carbon Steel	Galv. Carbon Steel		
TQ8411	SCE	11'-10 3/4"	22'-5"	<mark>18'-10"</mark>	46,506	N/A	200 - 575	/ Stainless Steel	/ Stainless Steel	2.00	Interpolated
1 00411	SLE	11'-10 3/4"	22'-5"	18'-10"	46,686	0 10 0 10		/ Otalilless Oteel	/ Otalilless Oteel		
	TAE	11'-10 3/4"	22'-5"	<mark>18'-10</mark> "	46,580	2/08/2	2021				
	TCE	11'-10 3/4"	22'-5"	18'-10"	46,799	111111111111111111111111111111111111111					
	TLE	11'-10 3/4"	22'-5"	18'-10"	46,580			10			
	UAE	11'-10 3/4"	22'-5"	18'-1 <mark>0"</mark>	46,594						
	UCE	11'-10 3/4"	22'-5"	18'-10"	46,882						
	ULE	11'-10 3/4"	22'-5"	18'-10"	47,062	THE PARTY OF THE P	ING CO				
	VAE	11'-10 3/4"	22'-5"	18'-10"	47,005	BUILD	ING				
	VCE	11'-10 3/4"	22'-5"	18'-10"	47,028						
	VLE	11'-10 3/4"	22'-5"	18'-10"	47,275						
	WAE	11'-10 3/4"	22'-5"	18'-10"	47,058						
	WCE	11'-10 3/4"	22'-5"	18'-10"	47,076						
	WLE	11'-10 3/4"	22'-5"	18'-10"	47,388						

Table 1b: Certified Cooling Tower Models - Isolated Mounting (Continued)

Unit Size	Fan, Sound and Certification	Unit Length	Unit Width	Unit Height	Operating Weight per Cell [lbs]	Tested Weight [lbs]	Voltage	Primary Structure Material	Hot / Cold Water Basin Material	S _{DS} z/h=1 [g]	UUT
	PAE	13'-10 3/4"	22'-5"	18'-10"	52,584						
	PCE	13'-10 3/4"	22'-5"	18'-10"	52,480						
	PLE	13'-10 3/4"	22'-5"	18'-10"	52,584						
	QAE	13'-10 3/4"	22'-5"	18'-10"	52,627			OL ANCE			
	QCE	13'-10 3/4"	22'-5"	18'-10"	52,523	RCOD	ECO				
	QLE	13'-10 3/4"	22'-5"	18'-10"	52,697		M				
	RAE	13'-10 3/4"	22'-5"	18'-10"	52,599						
	RCE	13'-10 3/4"	22'-5"	18'-10"	52,652	CHI		4			
	RLE	13'-10 3/4"	22'-5"	18'-10"	52,756	\mathcal{O}_{1} , i.e.		12			
	SAE	13'-10 3/4"	22'-5"	18'-10"	52,633	SD 04	74				
	SCE	13'-10 3/4"	22'-5"	18'-10"	52,714	3P-U	/				
	SLE	13'-10 3/4"	22'-5"	18'-10"	52,818		AAAAXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	(XXX (XXX (XXX)			
NC8412	TAE	13'-10 3/4"	22'-5"	<mark>18'-1</mark> 0"	52,777	othy J	Pilano	Galv. Carbon Steel	Galy Carbon Steel		
TQ8412	TCE	13'-10 3/4"	22'-5"	<mark>18'-10"</mark>	53,007	N/A	200 - 575	/ Stainless Steel	/ Stainless Steel	2.00	Interpolated
1 00712	TLE	13'-10 3/4"	22'-5"	18'-10"	53,112		001	7 Otaliliess Oteci	/ Otalilioss Otoci		
	UAE	13'-10 3/4"	22'-5"	<mark>18'-10</mark> "	52,791	2/08/2	2021				
	UCE	13'-10 3/4"	22'-5"	18'-10"	53,090	111111111111111111111111111111111111111					
	ULE	13'-10 3/4"	22'-5"	18'-10"	53,264			60			
	VAE	13'-10 3/4"	22'-5"	18'-1 <mark>0"</mark>	53,136						
	VCE	13'-10 3/4"	22'-5"	18'-10"	53,236						
	VLE	13'-10 3/4"	22'-5"	18'-10"	53,411		ING CO				
	WAE	13'-10 3/4"	22'-5"	18'-10"	53,260	BUILD	INO				
	WCE	13'-10 3/4"	22'-5"	18'-10"	53,580						
	WLE	13'-10 3/4"	22'-5"	18'-10"	53,458						
	XAE	13'-10 3/4"	22'-5"	18'-10"	53,955						
	XCE	13'-10 3/4"	22'-5"	18'-10"	53,856						
	XLE	13'-10 3/4"	22'-5"	18'-10"	54,094						

Table 1b: Certified Cooling Tower Models - Isolated Mounting (Continued)

Unit Size	Fan, Sound and Certification	Unit Length	Unit Width	Unit Height	Operating Weight per Cell [lbs]	Tested Weight [lbs]	Voltage	Primary Structure Material	Hot / Cold Water Basin Material	S _{DS} z/h=1 [g]	UUT
	NAE	11'-10 3/4"	22'-5"	22'-7 3/16"	51,468						
	NLE	11'-10 3/4"	22'-5"	22'-7 3/16"	51,679						
	PAE	11'-10 3/4"	22'-5"	22'-7 3/16"	51,632						
	PLE	11'-10 3/4"	22'-5"	22'-7 3/16"	51,632		ECOM				
	QAE	11'-10 3/4"	22'-5"	22'-7 3/16"	51,473	COD	FO				
	QCE	11'-10 3/4"	22'-5"	22'-7 3/16"	51,580	and the state of t	- 601				
	QLE	11'-10 3/4"	22'-5"	22'-7 3/16"	51,741			OLIANOCE			
	RAE	11'-10 3/4"	22'-5"	22'-7 3/16"	51,647	CHI					
	RCE	11'-10 3/4"	22'-5"	22'-7 3/16"	51,623	\mathfrak{D}_{1} i i		12			
	RLE	11'-10 3/4"	22'-5"	22'-7 3/16"	51,647	CD O	74				
	SAE	11'-10 3/4"	22'-5"	22'-7 3/16"	51,681	3P-U	/				
	SCE	11'-10 3/4"	22'-5"	22'-7 3/16"	51,685		AAAXXXYVWWWAAAAXXX	<u> </u>			
	SLE	11'-10 3/4"	22'-5"	22'-7 3/16"	51,866	othy J	Pilano				
NC8413	TAE	11'-10 3/4"	22'-5"	2 <mark>2'-7 3</mark> /16"	51,825	N/A	200 - 575	Galv. Carbon Steel	Galv. Carbon Steel	2.00	Interpolated
TQ8413	TCE	11'-10 3/4"	22'-5"	22'-7 3/16"	51,979	IN/A		/ Stai <mark>nless</mark> Steel	/ Stainless Steel	2.00	Interpolated
	TLE	11'-10 3/4"	22'-5"	22'-7 3/16"	52,226	2/08/2	2021				
	UAE	11'-10 3/4"	22'-5"	22'-7 3/16"	51,839	111111111111111111111111111111111111111					
	UCE	11'-10 3/4"	22'-5"	22'-7 3/16"	52,062			10			
	ULE	11'-10 3/4"	22'-5"	22'-7 3/16"	51,839			, V			
	VAE	11'-10 3/4"	22'-5"	22'-7 3/16"	52,184			06.			
	VCE	11'-10 3/4"	22'-5"	22'-7 3/16"	52,208	mir Thin	ING CO				
	VLE	11'-10 3/4"	22'-5"	22'-7 3/16"	52,388	BUILD	ING				
	WAE	11'-10 3/4"	22'-5"	22'-7 3/16"	52,238						
	WCE	11'-10 3/4"	22'-5"	22'-7 3/16"	52,255						
	WLE	11'-10 3/4"	22'-5"	22'-7 3/16"	52,502						
	XAE	11'-10 3/4"	22'-5"	22'-7 3/16"	52,999						
	XCE	11'-10 3/4"	22'-5"	22'-7 3/16"	52,822						
	XLE	11'-10 3/4"	22'-5"	22'-7 3/16"	52,999						

Table 1b: Certified Cooling Tower Models - Isolated Mounting (Continued)

Unit Size	Fan, Sound and Certification	Unit Length	Unit Width	Unit Height	Operating Weight per Cell [lbs]	Tested Weight [lbs]	Voltage	Primary Structure Material		S _{DS} z/h=1 [g]	UUT
	WLE	13'-10 3/4"	22'-5"	22'-7 3/16"	53,156	53,156		Galv. Carbon Steel	Galv. Carbon Steel	2.00	2B
	WLE	13'-10 3/4"	22'-5"	22'-7 3/16"	54,762						
	PAE	13'-10 3/4"	22'-5"	22'-7 3/16"	53,914						
	PLE	13'-10 3/4"	22'-5"	22'-7 3/16"	54,065						
	QAE	13'-10 3/4"	22'-5"	22'-7 3/16"	54,024	RCOD	FC				
	QCE	13'-10 3/4"	22'-5"	22'-7 3/16"	53,855	agust a i sa					
	QLE	13'-10 3/4"	22'-5"	22'-7 3/16"	54,092			OLIVACE			
	RAE	13'-10 3/4"	22'-5"	22'-7 3/16"	54,081	CHI	חכ				
	RCE	13'-10 3/4"	22'-5"	22'-7 3/16"	53,980	$\mathfrak{D}111$		12			
	RLE	13'-10 3/4"	22'-5"	22'-7 3/16"	54,149	CD O	74				
	SAE	13'-10 3/4"	22'-5"	22'-7 3/16"	53,962	3P-U	/	WW. U.			
	SCE	13'-10 3/4"	22'-5"	22'-7 3/16"	54,040			<u> </u>			
	SLE	13'-10 3/4"	22'-5"	22'-7 3/16"	54,483	othy J	Piland				
	TAE	13'-10 3/4"	22'-5"	2 <mark>2'-7 3</mark> /16"	54,169	otily o	1 Harro				
NC8414	TCE	13'-10 3/4"	22'-5"	22'-7 3/16"	54,325	0 /N/A /0	200 - 575		Galv. Carbon Steel	2.00	Interpolated
TQ8414	TLE	13'-10 3/4"	22'-5"	22'-7 3/16"	54,494	2/08/2	200 7 37 3	/ Stai <mark>nless</mark> Steel	/ Stainless Steel	2.00	interpolated
	UAE	13'-10 3/4"	22'-5"	22'-7 3/16"	54,183	111111111111111111111111111111111111111					
	UCE	13'-10 3/4"	22'-5"	22'-7 3/16"	54,405			6			
	ULE	13'-10 3/4"	22'-5"	22'-7 3/16"	54,642			, V			
	VAE	13'-10 3/4"	22'-5"	22'-7 3/16"	54,450			C.			
	VAE	13'-10 3/4"	22'-5"	22'-7 3/16"	54,450	mik Winner	· c CO				
	VCE	13'-10 3/4"	22'-5"	22'-7 3/16"	54,547	BUILD	ING				
	VLE	13'-10 3/4"	22'-5"	22'-7 3/16"	54,784						
	WAE	13'-10 3/4"	22'-5"	22'-7 3/16"	54,570						
	WAE	13'-10 3/4"	22'-5"	22'-7 3/16"	54,570						
	WLE	13'-10 3/4"	22'-5"	22'-7 3/16"	54,762						
	XAE	13'-10 3/4"	22'-5"	22'-7 3/16"	54,880						
	XCE	13'-10 3/4"	22'-5"	22'-7 3/16"	54,880						
	XLE	13'-10 3/4"	22'-5"	22'-7 3/16"	54,880						
	WCE	13'-10 3/4"	22'-5"	22'-7 3/16"	54,880	54,880		Galv. Carbon Steel	Galv. Carbon Steel	2.00	4B

Table 2: TEFC Fan Motors

WEG Model	Model	Rating [HP]	Motor Speed	Input Voltage	Motor Housing Material	Max Weight [lbs]	Test Unit	MFR	Branded Marley Model
		002				141	Extrapolated		
		003				159	Extrapolated		
		005				232	Extrapolated		
		007				276	Extrapolated		
		010		DEOR CODE CO		373	1A, 1B, 3A, 3B		
		015	Cinala Chaad	200/208-230/460/575 VAC	MP,	423	Interpolated		
		020	Single Speed 1800 rpm	3 Phase	4	537	Interpolated		
		025	1000 10111	3 (liase) 1 P	12	616	Interpolated		
		030		OSP-0171	I C	926	Interpolated		
		040		W 03F-0171	MIN 1., 1	998	Interpolated		
		050			manni (MANA)	1227	Interpolated		
		060		ву:Timothy J Pila	ind	1558	Interpolated		
		075				1558	Interpolated		
ET3	W22 CT Duty			00/00/0004	Cast Iron	1811	Interpolated	WEG	MCT
		002		DATE: 02/08/2021		141	Interpolated		
		003		C	20/	159	Interpolated		
		005		The state of the s	0,	232	Interpolated		
		007			4.5	276	Interpolated		
		010		PA	20DY	373	Interpolated		
		015		A RILLI DING		423	Interpolated		
		020	Dual Speed	200/460/575 VAC DING		537	Interpolated		
		025	1800/900 rpm	3 Phase		616	Interpolated		
		030				926	Interpolated		
		040				998	Interpolated		
		050				1227	Interpolated		
		060				1558	Interpolated		
		075				1558	2A, 2B, 4A, 4B		

Table 3: Fans

			Bla	ade Dia	amete	r (Inc	h)		Blade Material	Hub Material	Sound Designator	Max Weight	Test Unit	MFR
		66	72	84	108	120	132	144	Biado Matorial	Trab Material	Courte Doolgrator	[lbs]	1000 01110	
	4	Х	Х	Х	Х	Х	Х	X	Aluminum Alloy	Aluminum Alloy	Ultra Quiet Series	355	3A, 3B, 4A, 4B	
Blade Count	5	Х	Χ	Χ	Х	Χ	Χ	Χ		Galvanized Ductile	X7 Series	419	1A, 1B	Marley
	6	Χ	Χ	Χ	Х	Χ	Χ	Χ	Aluminum Alloy	Iron	(Quiet and Low	485	2A, 2B	
	8	Χ	Χ	Χ	Χ	Χ	Χ	Χ		11011	Sound Options)	617	Extrapolated	

Table 4: Single Reduction Geareducer

Model	Power Rating Range (HP)	Gear Ratios	Material	Test Unit	MFR
5, 2000	27 - 50	2.71 - 4.8	USF	1A, 1B, 3A, 3B	AT.
5, 2200	29 - 70	3.45 - 8.67	Cast Iron _	Interpolated	Marley
5, 2400	31 - 143	3.45 - 8.67		2A, 2B, 4A, 4B	

Note: Power rating is for sizing the model to the system (no input electrical power)

Table 5: VFD

_				. 0 _ / 0 0 / _ 0
Model	Power (HP)	Voltage	Test Unit	MFR
ACH550-01-XXXA-4	1-10		Extrapolated	
ACH550-01-015A-4	10	208-575	3A, 3B	ABB
ACH550-01-XXXA-4	10-75	200-575	Interpolated	ADD
ACH550-01-097A-4	75		4A, 4B	1

Table 6A: Marley Water Level Sensor probe assembly

Model	System Components	Test Unit	MFR
E2	(2) B/W probes with stilling chamber	1A, 1B	
E3	(3) B/W probes with stilling chamber	Interpolated	
E4	(4) B/W probes with stilling chamber	Interpolated	Marley
E5	(5) B/W probes with stilling chamber	Interpolated	Maney
E6	(6) B/W probes with stilling chamber	Interpolated	
E7	(7) B/W probes with stilling chamber	4A, 4B	

Table 6B: Marley LLC Water Level Control Panel

Model	Card Configuration	Voltage	Enclosure Type	Test Unit	MFR
1	MU			Extrapolated	
2	HA			Extrapolated	
3	LA			1A, 1B	
4	HCO			Interpolated	
5	LCO			Interpolated	
6	MU+HA			Interpolated	
7	MU+LA		ENRCODECO	Interpolated	
8	MU+HCO		OF OM	Interpolated	
9	MU+LCO	14.		Interpolated	
10			DSHPD Y	Interpolated	
11		REVIEW	93111 0 17	Interpolated	
12		0-1	OSP-0171	Interpolated	
	LA+HCO		001 0171	Interpolated	
14		/ //////		Interpolated	
15		120 VAC	BY:TimothyEMA Type 4xd	Interpolated	
	MU+HA+LA	120 VAC 50/60 HZ	E5 FIBERGLASS	3A, 3B	Marley
		\ \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	DATE: 02/08/2021	Interpolated	
	MU+HA+LCO		JATE. 02/00/2021	Interpolated	
19		9	+	Interpolated	
20				Interpolated	
21	MU+HCO+LCO			Interpolated	
22			TVI	Interpolated Interpolated	
23			PNIA BUILDING COOP	Interpolated	
25			122	Interpolated	
	MU+HA+LA+HCO			Interpolated	
27	MU+HA+LA+LCO			Interpolated	
28				Interpolated	
29				Interpolated	
30				Interpolated	
31				4A, 4B	

Table 7A: Cold Water Basin Heating System

Model	System Components	Test Unit	MFR
	Heater Element	1A, 1B, 2A, 2B,	
7131 Immersion	Temperature Probe	3A, 3B, 4A, 4B	INDEECO
	Control Panel	1A, 1B, 4A, 4B	

Note: Temp Probe and Control Panel same no matter the heater rating.

Table 7B: Cold Water Basin Heater Element

Basin Heater Element	Max. Weight [lbs]	Test Unit	MFR
1 - 6 KW	10	Extrapolated	
7.5 KW	11	1A, 1B, 2A, 2B	
8 - 12 KW	13	Interpolated	INDEECO
15 KW	18	3A, 3B, 4A, 4B	
18 - 20 KW	18	Extrapolated	

Note: Maximum of Two Elements Allowed per unit

Table 8: Marley M5 Vibration Switch Components

Model	Test Unit	4	MFR
M5	1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B		Marley

Table 9: Terminal Box Enclosures

Model	W	Н	D			Enclosure Type DilaVoltage	Test Unit	MFR
T-Box - Small	18"	20"	8.23"			100 mm	1A, 1B, 3A, 3B	
T-Box - Med Small	21.59"	25.59"	9.75"	E5	W	FIBERGLASS /2002 1480/3/60	Interpolated	Marley
T-Box - Med Large	25.59"	25.59"	9.75"	L 3	V	NEMA Type 4XU8/2U2 480/3/80	Interpolated	iviariey
T-Box - Large	25.59"	31.59"	9.75"		C		2A, 2B, 4A, 4B	

Table 10: SPPC Power Panel Enclosure

Model	W	Н	D		Enclosure Type	Voltage	Status Option	Test Unit	MFR
SPPC - Small	25.59"	31.59"	9.75"	E5	FIBERGLAS\$	480/3/60	LLCSTAT	3A, 3B	Marley
SPPC - Large	35.85"	31.30"	12.04"	L5	NEMA Type 4X	400/3/00	BHSTAT	4A, 4B	iviariey

LLCSTAT = Water Level Lights and Status

BHSTAT = Basin Heater Lights and Status

Table 11A - Inlet Components

					0 0 1 1 0 1 1 1 0		
Unit Size	Inlet Position Dual Single				Test Unit	Material	MFR
No.	Top	Тор	Single Top Side Bottom		TCSt Offic	Waterial	IVII TX
8401	Х	X	X	X	1A, 1B, 3A, 3B		
8402	Х	Х	Х	Χ	Interpolated		
8403	Х	Х	Х	Х	Interpolated		
8405	Χ	Χ	Х	Х	Interpolated		
8407	Χ	Χ	Χ	Х	Interpolated	PVC Pipe	Marley
8409	Х	Χ	Χ	Х	Interpolated	rvoripe	Iviality
8411	Х	Χ	Χ	Х	Interpolated	14.	
8412	Χ	Χ	Х	Х	Interpolated	(4)	OSL
8413	Χ	Χ	Х	Х	Interpolated		031
8414	Х	Х	Χ	Χ	2A, 2B, 4A, 4B	4	000

Table 11B - Inlet Options

	Option/Size	Test Unit	MFR
Material	PVC	3A, 3B, 4A, 4B	
Dranch Dine Naminal Size	6"	3A, 3B	
Branch Pipe Nominal Size (Inch)	8"	Interpolated	
(IIICII)	10"	4A, 4B	Marley
	6"	3A, 3B	iviariey
Riser Pipe Nominal Size (Inch)	8"	Interpolated	
Miser i ipe Morrilliai Size (IIICII)	10"	Interpolated	
COM	12"	4A, 4B	

UUT-1A/1B and UUT-2A/2B had dual top inlet option. . UUT-3A/3B and UU-4A/UUT-4B had single bottom inlet option

Table 12A - Fan Stack

Dimensions			Sta	ack Dia	mete	r (Inc	Test Unit	MFR		
Difficusion	3	66	72	84	108	120	132	144	rest offit	02/08/20
	12	Χ	Χ	Х	Χ	Χ	Χ	Χ	Extrapolated	:02/00/20
Stock Hoight	24	Χ	Χ	Х	Х	Χ	Χ	Χ	Extrapolated	+
Stack Height (Inch)	36	Χ	Χ	Х	Χ	Χ	Χ	Χ	3A, 3B	Marley
(IIICII)	48	Χ	Χ	Х	Х	Χ	Χ	Χ	Interpolated	
	60	Χ	Χ	Χ	Χ	Χ	Χ	Χ	4A, 4B	

BY:Timothy J Pila Table 12B - Fan Stack Material

Group	Stack Material	Test Unit	MFR
Stack Material	Galvanized Steel	3A, 3B	Marloy
Stack Material	Stainless Steel	4A, 4B	Marley

Table 13 - Fan Guard

Dimension	ıs	Material	Test Unit	MFR
	66	Stainless Steel / Galv. Steel	Extrapolated	
	72	Stainless Steel Galv. Steel	1A, 1B 3A, 3B	
Blade	84		Interpolated	
Diameter	108	Stainless Steel / Galv. Steel	Interpolated	Marley
(Inch)	120	Stairliess Steel / Galv. Steel	Interpolated	
	132		Interpolated	
	144	Galv. Steel Stainless Steel	2A, 2B 4A, 4B	

Rod Sizes: Major 5/16", Minor 7 Gauge. Welded Construction.



UUT-01A

PEER-STI 2010-14; UUT1

Model Line	Model Number	Manufacturer		
NC8401-NC8414	NC8401NAE	Marley		

Product Construction Summary

Stainless Steel Structure; Stainless Steel Hot Water Basin; Stainless Steel Cold Water Basin

Options / Subcomponent Summary

5 72" Blades Low Sound Fan: SPX Marley; 10 HP 200-575 V Fan Motor: WEG

		OFO'	RCODE	ECOM							
		U	UT Properti	ies	7/						
Weight		Dimensions [in]				Lowest Nat. Freq. [Hz					
[lbs]	Length	Width		He	Height		S-S	V			
8362	78.25	(1	154 P-01/1 122.5		9.3	8.6	6.3				
	UUT Highest Passed Seismic Run Information										
Building Code	Test C <mark>riteria</mark>	BySps	othz/h J	Piland	A _{FLX-H}	A _{RIG-H}	A _{FLX-V}	A _{RIG-V}			
CBC 2016	ICC-ES AC156	2.00	0.00	1.5	2.00	0.80	1.34	0.54			

Test Mounting Details

Unit attached to shake table interface fixture via (4) 3/4" diameter A325 bolts.





Weight [lbs]

53156

UNIT UNDER TEST (UUT) Summary Sheet

UUT-02A

PEER-STI 2010-14; UUT2

. Freq. [Hz]

٧

7.8

Model Line	Model Number	Manufacturer
NC8401-NC8414	NC8414WLE	Marley

Product Construction Summary

Galv. Steel Structure; Galv. Steel Hot Water Basin; Galv. Steel Cold Water Basin

Options / Subcomponent Summary

6 144" Blades Quiet Fan: SPX Marley; 75 HP 200-575 V Fan Motor: WEG

Length

166.75

B	UUT Properties			
	Dimensions [in]		Lowe	st Nat. Fi
1	Width	Height	F-B	S-S
	269 P-01/1	271.19	5.9	6.2

UUT Highest Passed Seismic Run Information

Building Code	Test C <mark>riteri</mark> a	BYSps	oth z/h J	Piland	A _{FLX-H}	A _{RIG-H}	A _{FLX-V}	\mathbf{A}_{RIG-V}
CBC 2016	ICC-ES AC156	2.00	0.00	1.5	2.00	0.80	1.34	0.54

_Test Mounting Details

Unit attached to dunnage frame via (8) 3/4" diameter A325 bolts.





UUT-01B

PEER-STI 2010-14: UUT1

Model Line	Model Number	Manufacturer
NC8401-NC8414	NC8401NAE	Marley

Product Construction Summary

Stainless Steel Structure; Stainless Steel Hot Water Basin; Stainless Steel Cold Water Basin

Options / Subcomponent Summary

5 72" Blades Low Sound Fan: SPX Marley; 10 HP 200-575 V Fan Motor: WEG

		FOR CO	DECOM						
		UUT Prop	erties						
Weight Dimensi			nensions [in] Lo				west Nat. Freq. [Hz]		
[lbs]	Length	Width	Hei	Height		S-S	V		
8362	78.2 <mark>5</mark>	154P-0	12	2.5	1.9	2.3	3.9		
	UUT	Highest Passed Seis	mic Run Inforn	nation			•		
Building Code	Test C <mark>riteria</mark>	BySps mot z/h	J Piland	A _{FLX-H}	A _{RIG-H}	A _{FLX-V}	A _{RIG-V}		
CBC 2016	ICC-ES AC156	2.00 1.00	1.5	3.20	2.40	1.34	0.54		
	TVV/AAA	=.00		0.20	=:		0.0.		

Test Mounting Details

Unit attached to dunnage frame via (4) 3/4" diameter A325 bolts. Dunnage frame attached to shake table interface fixture using (8)



All units were filled with contents and maintained structural integrity and functionality after AC-156 test.



UUT-02B

PEER-STI 2010-14; UUT2

Model Line	Model Number	Manufacturer
NC8401-NC8414	NC8414WLE	Marley

Product Construction Summary

Galv. Steel Structure; Galv. Steel Hot Water Basin; Galv. Steel Cold Water Basin

Options / Subcomponent Summary

OFOR CODE COM

6 144" Blades Quiet Fan: SPX Marley; 75 HP 200-575 V Fan Motor: WEG

		U	UT Properti	es						
Weight		Dimensions [in]					Lowest Nat. Freq. [Hz]			
[lbs]	Length	Wie	dth	Height		F-B	S-S	V		
53156	166.75	26	55P-01	271	.19	1.6	1.9	3.6		
	UUT Highest Passed Seismic Run Information									
Building Code		BYSDS	oth z /h J	Piland	A _{FLX-H}	A _{RIG-H}	A _{FLX-V}	A _{RIG-V}		
CBC 2016	ICC-ES AC156	2.00	1.00	1.5	3.20	2.40	1.34	0.54		

Test Mounting Details

Unit attached to dunnage frame via (8) 3/4" diameter A325 bolts. Dunnage frame attached to shake table interface fixture using (12) M6SH-1E-6000 VMC isolators.





UUT-03A

PEER-STI 2012-04; UUT3A

Model Line	Model Number	Manufacturer
NC8401-NC8414	NC8401NCE	Marley

Product Construction Summary

Stainless Steel Structure; Stainless Steel Hot Water Basin; Stainless Steel Cold Water Basin

Options / Subcomponent Summary

4 72" Blades Ultra Quiet Fan: SPX Marley; 10 HP 200-575 V Fan Motor: WEG; 10 HP VFD: ABB

	OFO.	RCODE	COM				
	NEL	IUT Properti	es				
Weight Dimension			ensions [in] Lowest Nat. Freq. [
Length	W	idth	Height		F-B	S-S	V
78 🗨	9	55P-01	71 11	17	6.7	5.5	8.1
UUT	Highest Pas	sed Seismi	c Run Inforn	nation			
Test C <mark>riteria</mark>	BySps	othz/h J	Piland	A _{FLX-H}	A _{RIG-H}	A _{FLX-V}	A _{RIG-V}
ICC-ES AC156	2.00	0.00	1.5	2.00	0.80	1.34	0.54
	78 UUT Test Criteria	Dimens Length W 78 1 UUT Highest Pas Test Criteria BySps	Dimensions [in] Length Width 78 UUT Highest Passed Seismid Test Criteria Sps. 12/h	Dimensions [in] Length Width Hei 78 UUT Properties Dimensions [in] Uither the properties UUT Highest Passed Seismic Run Inform Test Criteria Sps	Dimensions [in] Length Width Height 78 154 - 117 UUT Highest Passed Seismic Run Information Test Criteria S _{DS} z/h P A _{FLX-H}	Dimensions [in] Lower Length Width Height F-B 78 154 - 0 117 6.7 UUT Highest Passed Seismic Run Information Test Criteria S _{DS} tz/h A _{FLX-H} A _{RIG-H}	Dimensions [in] Lowest Nat. Freq Length Width Height F-B S-S 78 154 - 117 6.7 5.5 UUT Highest Passed Seismic Run Information Test Criteria S _{DS} z/h A _{FLX-H} A _{RIG-H} A _{FLX-V}

Test Mounting Details

Unit attached to shake table interface fixture frame via (4) 3/4" diameter Grade 8 bolts.





UUT-03B

PEER-STI 2012-04; UUT3B

Model Line	Model Number	Manufacturer
NC8401-NC8414	NC8401NCE	Marley

Product Construction Summary

Stainless Steel Structure; Stainless Steel Hot Water Basin; Stainless Steel Cold Water Basin

Options / Subcomponent Summary

4 72" Blades Ultra Quiet Fan: SPX Marley; 10 HP 200-575 V Fan Motor: WEG; 10 HP VFD: ABB

UUT Properties Dimensions [in] Lowest Nat. Freq. [Hz] Weight [lbs] Width Length Height F-B ٧ S-S 9000 78 154 - 0 117 5.4 2.2 1.9 **UUT Highest Passed Seismic Run Information Building Code Test Criteria** A_{RIG-H} SDS z/h dno A_{FLX-V} A_{RIG-V} A_{FLX-H} **CBC 2016** ICC-ES AC156 0.54 2.00 1.00 1.5 3.20 2.40 1.34

Test Mounting Details

Unit attached to dunnage frame via (8) 3/4" diameter Grade 8 bolts. Dunnage frame attached to shake table interface fixture using (8) MSSH-1E-1400 VMC isolators.





UUT-04A

PEER-STI 2012-04; UUT4A

Model Line	Model Number	Manufacturer
NC8401-NC8414	NC8414WCE	Marley

Product Construction Summary

Galv. Steel Structure; Galv. Steel Hot Water Basin; Galv. Steel Cold Water Basin

Options / Subcomponent Summary

4 144" Blades Quiet Fan: SPX Marley; 75 HP 200-575 V Fan Motor: WEG; 75 HP VFD: ABB

		:OFO	RCOD	ECON							
		NE	JUT Propert	ies							
Weight		Dimensions [in]				Lowest Nat. Freq. [Hz]					
[lbs]	[lbs] Length Width Height		ght	F-B	S-S	V					
54880	269 🗨	165P-017		71 26	35	6.2	4.7	5.5			
	UUT Highest Passed Seismic Run Information										
Building Code	Test C <mark>riteria</mark>	BYSDS	noth z /h J	Piland	A _{FLX-H}	A _{RIG-H}	A _{FLX-V}	A _{RIG-V}			
CBC 2016	ICC-ES AC156	2.00	0.00	1.5	2.00	0.80	1.34	0.54			
	\ \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	Test	t Mounting [Details	MIII)						

Test Mounting Details

Unit attached to dunnage frame via (12) 3/4" diameter Grade 8 bolts. Dunnage frame attached to shake table interface fixture via (16) 3/4" diameter Grade 8 bolts.





UUT-04B

PEER-STI 2012-04; UUT4B

Model Line	Model Number	Manufacturer
NC8401-NC8414	NC8414WCE	Marley

Product Construction Summary

Galv. Steel Structure; Galv. Steel Hot Water Basin; Galv. Steel Cold Water Basin

Options / Subcomponent Summary

4 144" Blades Quiet Fan: SPX Marley; 75 HP 200-575 V Fan Motor: WEG; 75 HP VFD: ABB

		FOR COD	ECOM							
UUT Properties										
Weight	Dimensions [in]			Lowest Nat. Freq. [Hz]						
[lbs]	Length	Width	Height		F-B	S-S	V			
54880	269 🗨	065P-01	265		1.7	1.8	4.4			
	UUT Highest Passed Seismic Run Information									
Building Code	Test C <mark>riteria</mark>	BySps mot z/h J	Piland	A _{FLX-H}	A _{RIG-H}	A _{FLX-V}	A _{RIG-V}			
CBC 2016	ICC-ES AC156	2.00 1.00	1.5	3.20	2.40	1.34	0.54			
	TANAN	2.00 1.00	Harra	WWW.	_		<u> </u>			

Test Mounting Details

Unit attached to dunnage frame via (12) 3/4" diameter Grade 8 bolts. Dunnage frame attached to shake table interface fixture using (12) M6SH-1E-6000 VMC isolators.

