AIR CONDITIONERS

TS

T-CLASS™ SPLIT SYSTEM UNITS
R-410A - 60 HZ

ENGINEERING DATA

Bulletin No. 210524
February 2009
Supersedes January 2009

072-090 Models

180-240 Models

120-150 Models

EER up to 11.4
6 to 20 Tons
Cooling Capacity - 66,000 to 236,000 Btuh

MODEL NUMBER IDENTIFICATION

T S A 120 S 4 S N 1 Y

Brand/Family
T = T-Class™ Product Line

Unit Type
S = Split System Air Conditioner

Major Design Sequence
A = 1st Generation
B = 2nd Generation

Nominal Cooling Capacity - Tons
072 = 6 Tons
090 = 7.5 Tons
120 = 10 Tons
150 = 12.5 Tons
180 = 15 Tons
240 = 20 Tons

Cooling Efficiency
S = Standard Efficiency

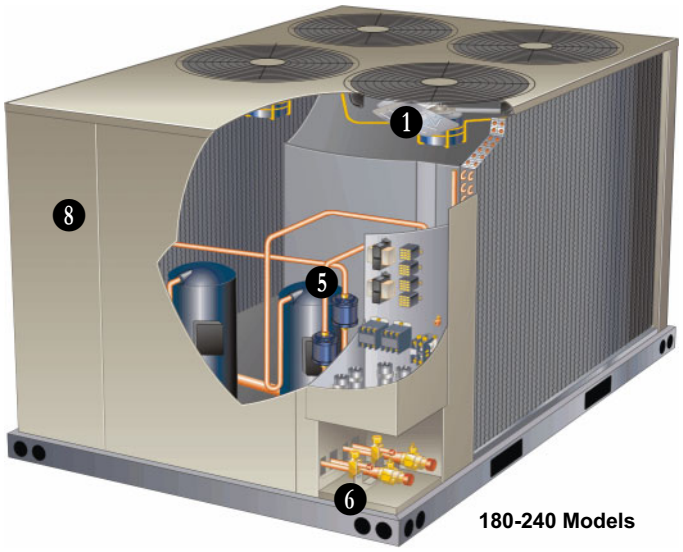
Refrigerant Type
4 = R-410A

Refrigerant Circuits
S = Single Circuit
D = Dual Circuits

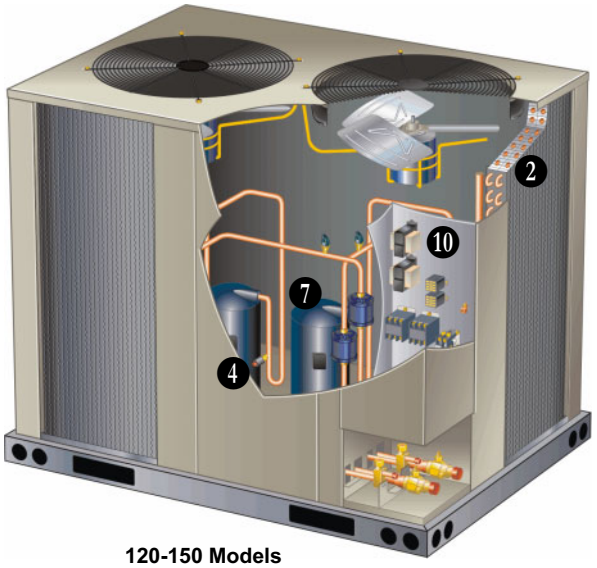
Part Load Capability
N = Single Stage Compressor

Minor Design Sequence
1 = 1st Revision
2 = 2nd Revision
3 = 3rd Revision

Voltage
Y = 208/230V-3 phase-60hz
G = 460V-3 phase-60hz
J = 575V-3 phase-60hz



180-240 Models



120-150 Models

072-090 Models

FEATURES AND BENEFITS

CONTENTS

EQUIPMENT WARRANTY

Compressor - limited warranty for **five years** in non-residential applications.

All other covered components - **one year** in non-residential applications.

Refer to Lennox Equipment Limited Warranty certificate for specific details.

APPROVALS

All units tested in Lennox' Research Laboratory environmental test room or ETL certified environmental testing facility.

Certified in accordance with the ULE certification program, which is based on ARI Standard 340/360-2007.

Sound tested in Lennox reverberant sound test room in accordance with test conditions included in ARI Standard 270-95 or 370-2001.

Units and components within are bonded for grounding to meet safety standards for servicing required by UL, ULC, NEC and CEC.

All units are ETL listed.

ISO 9001 Registered Manufacturing Quality System.

FEATURES AND BENEFITS

APPLICATIONS

Air conditioners are available in 6, 7.5, 10 ton (one compressor) and 10, 12.5, 15 and 20 ton (two compressors) nominal sizes.

Matching air handlers provide a wide range of cooling capacities and applications. See ARI Ratings tables.

See Air Handlers sections for data.

Units shipped completely factory assembled, piped, and wired. Each unit is test operated at the factory insuring proper operation.

Installer must set air conditioner, connect refrigerant lines, add refrigerant charge and make electrical connections to complete job.

REFRIGERATION SYSTEM

Refrigerant

Units operate with chlorine-free, ozone friendly, R-410A (field furnished).

1 Outdoor Coil Fan(s)

TSA072 and TSA090 units have one outdoor fan. TSA120 and TSA150 units have two outdoor fans. TSA180 and TSA240 units have four outdoor fans.

Direct drive fan(s) moves large volumes of air uniformly through entire condenser coil(s) for high refrigerant cooling capacity.

Upward discharge of air reduces operating sound levels and prevents damage to lawns, shrubs, and walkways.

Fan motors are totally enclosed, overload protected and equipped with a rain shield.

Fan service access is accomplished by removal of fan guard(s) or removal of access panel.

2 Copper Tube/Enhanced Fin Coil(s)

Units are equipped with a wrap-around “U” shaped coil (072-090-120 models) or two “L” shaped coils (150-180-240 models).

Lennox designed and fabricated coils constructed of precisely spaced ripple-edge aluminum fins machine fitted to seamless copper tubes.

Lanced fins provide maximum exposure of fin surface to air stream resulting in excellent heat transfer.

Fins equipped with collars that grip tubing for maximum contact area.

Flared shoulder tubing connections and machine brazed silver soldering provide tight, leakproof joints.

Long life copper tubing is corrosion-resistant and easy to field service.

Thoroughly factory tested under high pressure to ensure leakproof construction.

Completely accessible for cleaning.

3 High Pressure Switch

Shuts off unit if abnormal operating conditions cause discharge pressure to rise above setting.

Protects the compressor from excessive condensing pressure.

Manual reset.

4 Loss of Charge Switch

Shuts off unit if liquid line pressure falls below setting.

Provides loss of charge and freeze-up protection.

Automatic reset.

5 Hi-Capacity Drier(s)

Drier traps moisture or dirt that could contaminate the refrigerant system.

6 Refrigerant Lines and Service Valves

Suction and liquid lines are located on corner of unit cabinet and are made with sweat connections. See dimension drawings.

Fully serviceable suction and liquid line service valves provide complete service access to refrigerant system. Suction valve can be fully shut off, while liquid valve can be front seated to manage refrigerant charge while servicing system. Accessible outside of unit cabinet.

7 COMPRESSORS

TSA072, TSA090 and TSA120S4S models feature a single scroll compressor. TSA120S4D, TSA150, TSA180 and TSA240 models have two scroll compressors.

Compressor features high efficiency with uniform suction flow, constant discharge flow and high volumetric efficiency and quiet operation.

Compressor consists of two involute spiral scrolls matched together to generate a series of crescent shaped gas pockets between them.

During compression, one scroll remains stationary while the other scroll orbits around it.

Gas is drawn into the outer pocket, the pocket is sealed as the scroll rotates.

As the spiral movement continues, gas pockets are pushed to the center of the scrolls. Volume between the pockets is simultaneously reduced.

When pocket reaches the center, gas is now high pressure and is forced out of a port located in the center of the fixed scrolls.

During compression, several pockets are compressed simultaneously resulting in a smooth continuous compression cycle.

Continuous flank contact, maintained by centrifugal force, minimizes gas leakage and maximizes efficiency.

Scroll compressor is tolerant to the effects of slugging and contaminants. If this occurs, scrolls separate, allowing liquid or contaminants to to be worked toward the center and discharged.

Low gas pulses during compression reduces operational sound levels.

Compressor motor is internally protected from excessive current and temperature.

Compressor is installed in the unit on resilient rubber mounts for vibration free operation.

Crankcase Heater(s) (All Models)

Crankcase heater(s) prevents migration of liquid refrigerant into compressor(s) and ensures proper compressor lubrication.

FEATURES AND BENEFITS

CABINET

8 Heavy-gauge, pre-painted steel cabinet provides superior rust and corrosion protection.
Removeable panels allow access for unit servicing.

9 Heavy duty steel base channels raise the unit off of mounting surface away from damaging moisture.
Unit lifting holes and forklift slots furnished in base rails. See dimension drawings.

10 **Control Box**
Control box located in separate compartment in unit cabinet .
All controls are pre-wired at the factory.
Control box is large enough for field installed DDC or other field supplied control modules.

OPTIONS

Factory Installed

Corrosion Protection

Polymeric epoxy coating that is deposited by electrical transport (electrophoresis), using a process known as electrocoat (e-coat). Available for enhanced coil corrosion protection. Factory installed on the condenser coil. Painted base pan is provided with this option.

Field Installed

Coil Guards

Heavy duty sheet metal and metal mesh enclosures protect coils from damage. Field installed.

Hail Guards

Heavy duty sheet metal and metal mesh enclosures protect coils from damage. Field installed.

CONTROLS

OPTIONS

Field Installed

L Connection® Network

Complete building automation control system for single or multi-zone applications. Options include local interface, software for local or remote communication, and hardware for networking other control functions. See L Connection Network Engineering Handbook Bulletin for details.

Network Thermostat Controller

Required for use with the L Connection Network. Monitors and controls system operation.

Low Ambient Control

Air conditioning units operate satisfactorily down to 30ºF outdoor air temperature without any additional controls. Low Ambient Control Kit can be field installed, allowing unit operation down to 0ºF.

Thermostat

Thermostat is not furnished with unit and must be ordered extra.
See Page 5, individual Thermostat bulletins and Lennox Price Book.

OPTIONAL CONVENTIONAL TEMPERATURE CONTROL SYSTEMS - FIELD INSTALLED

COMMERCIAL TOUCHSCREEN THERMOSTAT

Intuitive Touchscreen Interface - **Two Stage Heating / Two Stage Cooling Conventional or Heat Pump** - Seven Day Programmable - Four Time Periods/Day - Economizer Output - Title 24 Compliant - ENERGY STAR® Qualified - Backlit Display - Automatic Changeover — C0STAT02AE1L

Sensors For Touchscreen Thermostat

[1] Remote non-adjustable wall mount 20k temperature sensor C0SNZN01AE1-

[1] Remote non-adjustable wall mount 10k averaging temperature sensor C0SNZN73AE1-

[1] Remote non-adjustable duct mount temperature sensor C0SNDC00AE1-

Outdoor temperature sensor C0SNSR03AE1-

Accessories For Touchscreen Thermostat

Locking cover (clear) C0MISC15AE1-

[1] Remote sensors for C0STAT02AE1L can be applied in the following combinations: (1) C0SNZN01AE1-, (2) C0SNZN73AE1-, (2) C0SNZN01AE1- and (1) C0SNZN73AE1-, (4) C0SNZN01AE1-, (3) C0SNZN01AE1- and (2) C0SNZN73AE1.

DIGITAL NON-PROGRAMMABLE THERMOSTATS

Intuitive Interface - Automatic Changeover - Simple Up and Down Temperature Control

Two-stage heating / cooling conventional systems C0STAT10AE1L

Sensor For Digital Non-Programmable Thermostats Above

Remote wall mounted temperature sensor C0SNZN00AE1-

Intuitive Interface - Automatic Changeover - Backlit Display - Simple Up and Down Temperature Control

One-stage heating / cooling conventional systems C0STAT12AE1L

Sensor For Digital Non-Programmable Thermostats Above

Outdoor temperature sensor C0SNSR04AE1-

Accessories For Digital Non-Programmable Thermostats Above

Optional wall mounting plate C0MISC17AE1-

SPECIFICATIONS — 6 - 7.5 TON

General Data	**Model No.**	**TSA072S4S**	**TSA090S4S**
	Nominal Size - Tons	6	7.5
Connections (sweat)	Liquid line - in. (o.d)	(1) 5/8	(1) 5/8
	Suction line - in. (o.d)	(1) 1-1/8	(1) 1-1/8
Refrigerant (R-410A)		Factory installed holding charge	
[1] Field provided charge with 25 ft. line set		11 lbs. 0 oz.	16 lbs. 0 oz.
Condenser Coil	Net face area - sq. ft. Outer coil	29.3	29.3
	Inner coil	- - -	28.4
	Tube diameter - in. & no. of rows	3/8 - 1	3/8 - 2
	Fins per inch	20	20
Condenser Fan(s)	Diameter - in. & no. of blades	(1) 24 - 3	(1) 24 - 4
	Motor hp	(1) 1/3	(1) 1/2
	Total air volume - cfm	5100	5600
	Rpm	1075	1075
	Watts	430	580

ELECTRICAL DATA

	Line voltage data - 60 hz - 3 phase	**208/230V**	**460V**	**575V**	**208/230V**	**460V**	**575V**
	[2] Maximum Overcurrent Protection (amps)	45	20	15	50	25	20
	[3] Minimum circuit ampacity	27	14	11	35	17	13
Compressor	No. of Compressors	1	1	1	1	1	1
	Rated load amps	19	9.7	7.4	25	12.2	9
	Locked rotor amps	123	62	50	164	100	78
Condenser Fan Motor (1 phase)	No. of motors	1	1	1	1	1	1
	Full load amps	2.4	1.3	1	3	1.5	1.2
	Locked rotor amps	4.7	2.4	1.9	6	3	2.9

NOTE - Extremes of operating range are plus and minus 10% of line voltage.
[1] Refer to the Lennox Refrigerant Piping Manual to determine refrigerant charge required with longer length refrigerant lines.
[2] HACR type circuit breaker or fuse.
[3] Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements.

SPECIFICATIONS — 10 TON

General Data	**Model No.**	**TSA120S4S**	**TSA120S4D**
	Nominal Size - Tons	10	10
Connections (sweat)	Liquid line - in. (o.d)	(1) 5/8	(2) 5/8
	Suction line - in. (o.d)	(1) 1-3/8	(2) 1-1/8
Refrigerant (R-410A)		Factory installed holding charge	
[1] Field provided charge with 25 ft. line set		17 lbs. 0 oz.	20 lbs. 0 oz.
Condenser Coil	Net face area - sq. ft. Outer coil	29.3	29.3
	Inner coil	28.4	28.4
	Tube diameter - in. & no. of rows	3/8 - 2	3/8 - 2
	Fins per inch	20	20
Condenser Fan(s)	Diameter - in. & no. of blades	(2) 24 - 3	(2) 24 - 3
	Motor hp	(2) 1/3	(2) 1/3
	Total air volume - cfm	8300	8300
	Rpm	1075	1075
	Watts	830	830

ELECTRICAL DATA

	Line voltage data - 60 hz - 3 phase	**208/230V**	**460V**	**575V**	**208/230V**	**460V**	**575V**
	[2] Maximum Overcurrent Protection (amps)	70	40	25	50	25	20
	[3] Minimum circuit ampacity	43	24	18	41	21	15
Compressor	No. of Compressors	1	1	1	2	2	2
	Rated load amps (total)	30.1	16.7	12.2	18 (32)	7.8 (15.6)	5.7 (11.4)
	Locked rotor amps (total)	225	114	80	110 (220)	52 (104)	38.9 (77.8)
Condenser Fan Motor (1 phase)	No. of motors	2	2	2	2	2	2
	Full load amps (total)	2.4 (4.8)	1.3 (2.6)	1 (2)	2.4 (4.8)	1.3 (2.6)	1 (2)
	Locked rotor amps (total)	4.7 (9.4)	2.4 (4.8)	1.9 (3.8)	4.7 (9.4)	2.4 (4.8)	1.9 (3.8)

NOTE - Extremes of operating range are plus and minus 10% of line voltage.
[1] Refer to the Lennox Refrigerant Piping Manual to determine refrigerant charge required with longer length refrigerant lines.
[2] HACR type circuit breaker or fuse.
[3] Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements.

SPECIFICATIONS — 12.5 - 20 TON

General Data	**Model No.**	**TSA150S4D**	**TSA180S4D**	**TSA240S4D**
	Nominal Size - Tons	12.5	15	20
Connections (sweat)	Liquid line - in. (o.d)	(2) 5/8	(2) 5/8	(2) 5/8
	Suction line - in. (o.d)	(2) 1-1/8	(2) 1-1/8	(2) 1-3/8
Refrigerant (R-410A)		Factory installed holding charge		
[1] Field provided charge with 25 ft. line set		21 lbs. 0 oz.	29 lbs. 0 oz.	35 lbs. 0 oz.
Condenser Coil	Net face area - sq. ft. Outer coil	34.2	58.7	58.7
	Inner coil	33.3	57.7	57.7
	Tube diameter - in. & no. of rows	3/8 - 2	3/8 - 2	3/8 - 2
	Fins per inch	20	20	20
Condenser Fan(s)	Diameter - in. & no. of blades	(2) 24 - 4	(4) 24 - 3	(4) 24 - 3
	Motor hp	(2) 1/2	(4) 1/3	(4) 1/3
	Total air volume - cfm	10,300	16,600	16,600
	Rpm	1075	1075	1075
	Watts	1130	1660	1660

ELECTRICAL DATA

	Line voltage data - 60 hz - 3 phase	**208/230V**	**460V**	**575V**	**208/230V**	**460V**	**575V**	**208/230V**	**460V**	**575V**
	[2] Maximum Overcurrent Protection (amps)	60	30	25	90	40	30	100	50	40
	[3] Minimum circuit ampacity	49	25	20	66	33	25	78	43	32
Compressor	No. of Compressors	2	2	2	2	2	2	2	2	2
	Rated load amps (total)	19 (38)	9.7 (19.4)	7.4 (14.8)	25 (50)	12.2 (24.4)	9 (18)	30.1 60.2)	16.7 (33.4)	12.2 (24.8)
	Locked rotor amps (total)	123 (246)	62 (124)	50 (100)	164 (328)	100 (200)	78 (156)	225 (450)	114 (228)	80 (160)
Condenser Fan Motor (1 phase)	No. of motors	2	2	2	4	4	4	4	4	4
	Full load amps (total)	3 (6)	1.5 (3)	1.2 (2.4)	2.4 (9.6)	1.3 (5.2)	1 (4)	2.4 (9.6)	1.3 (5.2)	1 (4)
	Locked rotor amps (total)	6 (12)	3 (6)	2.9 (5.8)	4.7 (18.8)	2.4 (9.6)	1.9 (7.6)	4.7 (18.8)	2.4 (9.6)	1.9 (7.6)

NOTE - Extremes of operating range are plus and minus 10% of line voltage.
[1] Refer to the Lennox Refrigerant Piping Manual to determine refrigerant charge required with longer length refrigerant lines.
[2] HACR type circuit breaker or fuse.
[3] Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements.

OPTIONS / ACCESSORIES

Item		Catalog No.	072S4S	090S4S	120S4S	120S4D	150S4D	180S4D	240S4D
CABINET									
Coil Guards	T2GARD20L-1	**47W12**	x	x					
	T2GARD20M-1	**47W13**			x	x			
	T2GARD21M-1	**47W14**					x		
	T2GARD20N-1-	**47W15**						x	x
Hail Guards	T2GARD10L-1	**47W16**	x	x					
	T2GARD10M-1	**47W17**			x	x			
	T2GARD11M-1	**47W18**					x		
	T2GARD10N-1	**47W19**						x	x
Corrosion Protection		Factory	○	○	○	○	○	○	○
CONTROLS									
L Connection® Building Automation System		- - -	x	x	x	x	x	x	x
Low Ambient Control (0ºF)	T2CWKT01LM1-	**44W17**	x	x	x				
	T2CWKT02M-1-	**44W18**				x	x		
	T2CWKT03N-1-	**44W19**						x	x
Network Thermostat Controller	C0CTRL07AE1L	**17M10**	x	x	x	x	x	x	x

NOTE - The catalog and model numbers that appear here are for ordering field installed accessories only.
○ - Factory Installed with extended lead time.
X - Field Installed

OUTDOOR SOUND DATA

[1] Unit Model No.	Octave Band Sound Power Levels dBA, re 10^{-12} Watts Center Frequency - HZ								[1]Sound Rating Number (dB)
	63	125	250	500	1000	2000	4000	8000	
TSA072S4S	60	65	68	73	76	72	68	63	81
TSA090S4S	56	64	69	73	77	74	70	63	81
TSA120S4S	61	70	77	82	81	77	75	71	86
TSA120S4D	65	71	77	80	80	77	72	67	85
TSA150S4D	62	68	77	80	82	78	73	65	86
TSA180S4D	66	73	80	83	83	79	74	66	88
TSA240S4D	66	73	80	85	84	80	78	74	89

NOTE - The octave sound power data does not include tonal correction.
[1] Tested according to ARI Standard 270 or 370 test conditions.

ARI RATINGS

Gross Cooling Capacity Btuh	Net Cooling Capacity Btuh	EER	Integrated Part Load Value	Indoor Coil or Air Handler	Expansion Device
TSA072S4S					**6 TON**
Air Handlers					
68,300	66,000	10.2	- - -	[2] CBX32M-060 (Multi-Position)	Factory TXV
71,800	69,000	10.2	- - -	[3] CBX27UH-060 (Up-Flow / Horizontal)	Factory TXV
72,700	71,000	11.2	- - -	[3] TAA072S4S (Up-Flow / Horizontal)	Factory TXV
Up-Flow Indoor Coils					
71,800	69,000	10.5	- - -	[2] CX34-62D-6F	Factory TXV
75,000	72,000	10.8	- - -	(2) CX34-43B/C-6F	Factory TXV
Horizontal Indoor Coils					
70,100	68,000	10.3	- - -	[2] CH33-62D-2F	[1] **91M02**
TSA090S4S					**7.5 TON**
Air Handlers					
91,800	89,000	11.2	- - -	[3] TAA090S4S (Up-Flow / Horizontal)	Factory TXV
95,000	92,000	11.3	- - -	[3] TAA120S4D (Up-Flow / Horizontal)	Factory TXV
Up-Flow Indoor Coils					
92,200	89,000	10.8	- - -	[2] (2) CX34-49C-6F	Factory TXV
Down-Flow Indoor Coils					
90,800	87,000	10.6	- - -	[2] (2) CR33-50/60C-F	[1] **91M02**
Horizontal Indoor Coils					
92,800	89,000	10.8	- - -	[2] (2) CH33-49C-2F	[1] **91M02**
(2) TSA090S4S					**(2) 7.5 TON**
Air Handlers					
178,000	172,000	11.0	12.2	[3] TAA180S4D (Up-Flow / Horizontal)	Factory TXV
TSA120S4S					**10 TON**
Air Handlers					
117,100	113,000	11.2	- - -	[3] TAA120S4D (Up-Flow / Horizontal)	Factory TXV
Up-Flow Indoor Coils					
115,500	111,000	10.9	- - -	[2] (2) CX34-62D-6F	Factory TXV
Down-Flow Indoor Coils					
111,400	107,000	10.6	- - -	[2] (2) CR33-50/60C-2F	[1] **91M02**
Horizontal Indoor Coils					
116,000	111,000	10.8	- - -	[2] (2) CH33-62D-2F	[1] **91M02**
(2) TSA120S4S					**(2) 10 TON**
Air Handlers					
231,800	222,000	11.0	12.0	[3] TAA240S4D (Up-Flow / Horizontal)	
TSA120S4D (DUAL CIRCUIT)					**10 TON**
Air Handlers					
119,700	115,000	11.2	11.8	[3] TAA120S4D (Up-Flow / Horizontal)	Factory TXV
Up-Flow Indoor Coils					
115,900	111,000	10.8	11.3	(2) CX34-60D-6F	Factory TXV
116,900	112,000	10.9	11.4	(2) CX34-62D-6F	Factory TXV
Down-Flow Indoor Coils					
111,700	107,000	10.7	11.1	[2] (2) CR33-50/60C-2F	[1] **91M02**
Horizontal Indoor Coils					
116,100	111,000	10.8	11.2	[2] (2) CH33-62D-2F	[1] **91M02**

NOTES - Net capacity includes indoor blower motor heat deduction. Gross capacity does not include indoor blower motor heat deduction.
Units with capacity of 65,000 Btuh or greater are certified in accordance with the ULE certification program which is based on ARI Standard 340/360: 95°F outdoor air temperature, 80°F db/67°F wb entering evaporator air (minimum external duct static pressure) with 25 ft. of connecting refrigerant lines.

1 Factory installed RFC or expansion valve on indoor unit MUST be replaced with expansion valve kit (ordered separately).
2 Blower must be capable of time-off blower delay. Indoor Blower Off Delay Relay (58M81) is recommended for field installation.
3 Blower control must be set for a time-off blower delay.

ARI RATINGS

Gross Cooling Capacity Btuh	Net Cooling Capacity Btuh	EER	Integrated Part Load Value	Indoor Coil or Air Handler	Expansion Device
TSA150S4D (DUAL CIRCUIT)					**12.5 TON**
Air Handlers					
140,300	136,000	11.0	11.4	[3] TAA120S4D (Up-Flow / Horizontal)	Factory TXV
140,100	136,000	11.0	11.4	[3] TAA150S4D (Up-Flow / Horizontal)	Factory TXV
147,700	142,000	11.2	11.6	[3] TAA180S4D (Up-Flow / Horizontal)	Factory TXV
TSA180S4D (DUAL CIRCUIT)					**15 TON**
Air Handlers					
183,500	178,000	11.0	12.0	[3] TAA180S4D (Up-Flow / Horizontal)	Factory TXV
195,600	190,000	11.4	12.2	[3] (2) TAA090S4S (Up-Flow / Horizontal)	Factory TXV
TSA240S4D (DUAL CIRCUIT)					**20 TON**
Air Handlers					
240,900	232,000	11.0	11.8	[3] TAA240S4D (Up-Flow / Horizontal)	Factory TXV
244,600	236,000	11.3	12.0	[3] (2) TAA120S4D (Up-Flow / Horizontal)	Factory TXV

NOTES - Net capacity includes indoor blower motor heat deduction. Gross capacity does not include indoor blower motor heat deduction.
Units with capacity of 65,000 Btuh or greater are certified in accordance with the ULE certification program which is based on ARI Standard 340/360: 95°F outdoor air temperature, 80°F db/67°F wb entering evaporator air (minimum external duct static pressure) with 25 ft. of connecting refrigerant lines.

[1] Factory installed RFC or expansion valve on indoor unit MUST be replaced with expansion valve kit (ordered separately).
[2] Blower must be capable of time-off blower delay. Indoor Blower Off Delay Relay (58M81) is recommended for field installation.
[3] Blower control must be set for a time-off blower delay.

WEIGHT DATA

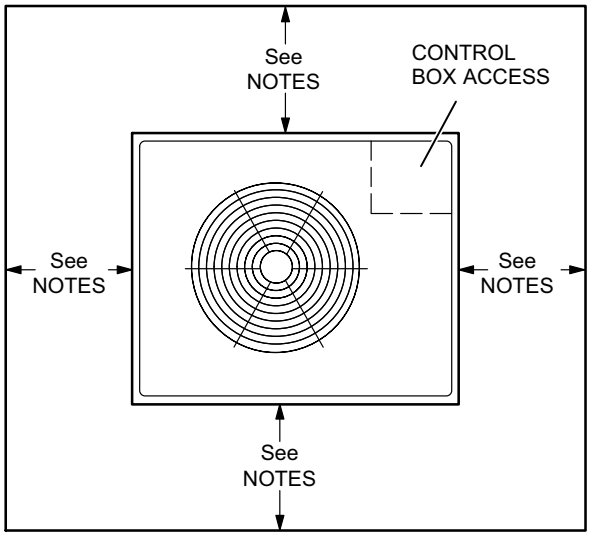
Model No.	Net		Shipping	
	lbs.	kg	lbs.	kg
072	305	138	325	147
090	355	161	375	170
120S	465	211	490	222
120D	480	218	505	229
150	535	243	560	254
180	775	352	800	363
240	865	392	890	404

OPTIONS / ACCESSORIES

	Net		Shipping	
	lbs.	kg	lbs.	kg
COIL GUARDS				
T2GARD20L-1	40	18	45	20
T2GARD20M-1	45	20	50	23
T2GARD21M-1	45	20	50	23
T2GARD20N-1-	90	41	100	45
HAIL GUARDS				
T2GARD10L-1	70	32	75	34
T2GARD10M-1	75	34	80	36
T2GARD11M-1	75	34	80	36
T2GARD10N-1	120	54	130	59

UNIT CLEARANCES - INCHES (MM)

TSA072 and TSA090



NOTES:

Service clearance of 30 in. (762 mm) must be maintained on one of the sides adjacent to the control box.

Clearance to one of the other three sides must be 36 in. (914 mm).

Clearance to one of the remaining two sides may be 12 in. (305 mm) and the final side may be 6 in. (152 mm).

A clearance of 24 in. (610 mm) must be maintained between two units.

48 in. (1219 mm) clearance required on top of unit.

TSA120 and TSA150

NOTES:

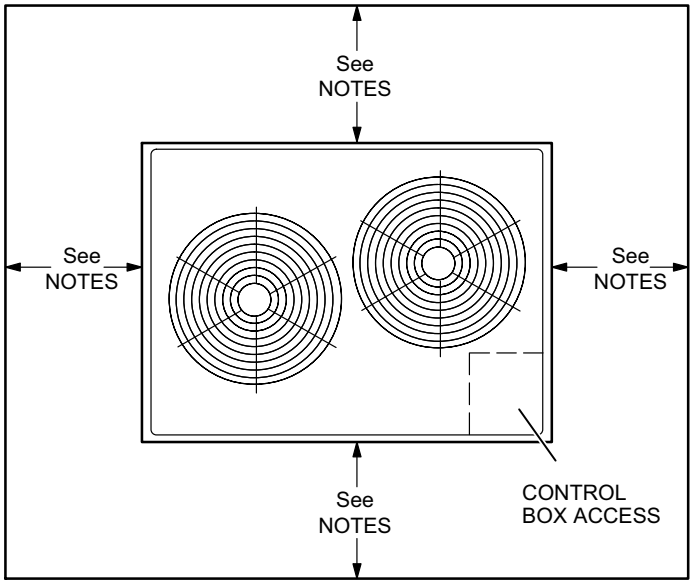
Service clearance of 30 in. (762 mm) must be maintained on one of the sides adjacent to the control box.

Clearance to one of the other three sides must be 36 in. (914 mm).

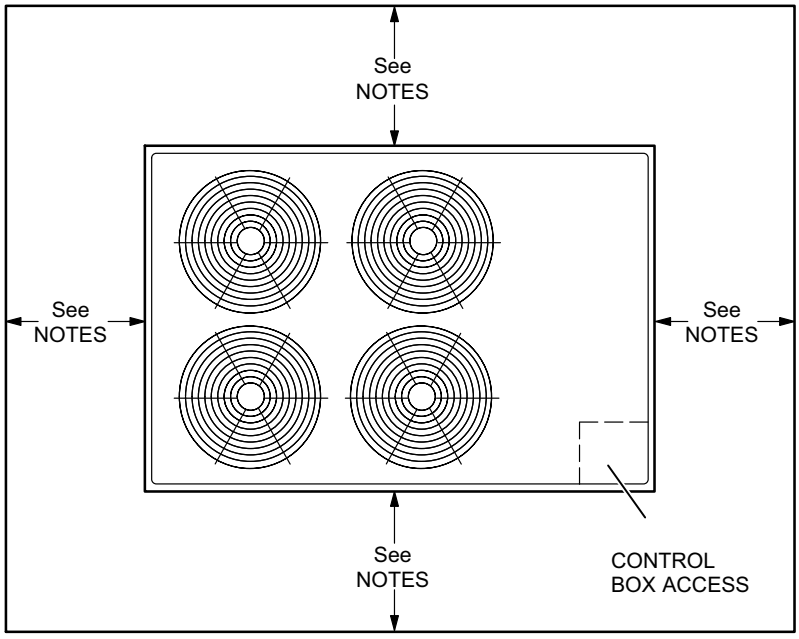
Clearance to one of the remaining two sides may be 12 in. (305 mm) and the final side may be 6 in. (152 mm).

A clearance of 24 in. (610 mm) must be maintained between two units.

48 in. (1219 mm) clearance required on top of unit.



TSA180 and TSA240



NOTES:

Service clearance of 30 in. (762 mm) must be maintained on one of the sides adjacent to the control box.

Clearance to one of the other three sides must be 36 in. (914 mm).

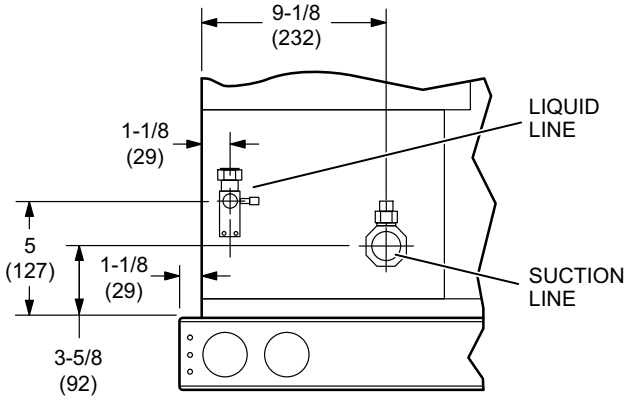
Clearance to one of the remaining two sides may be 12 in. (305 mm) and the final side may be 6 in. (152 mm).

A clearance of 24 in. (610 mm) must be maintained between two units.

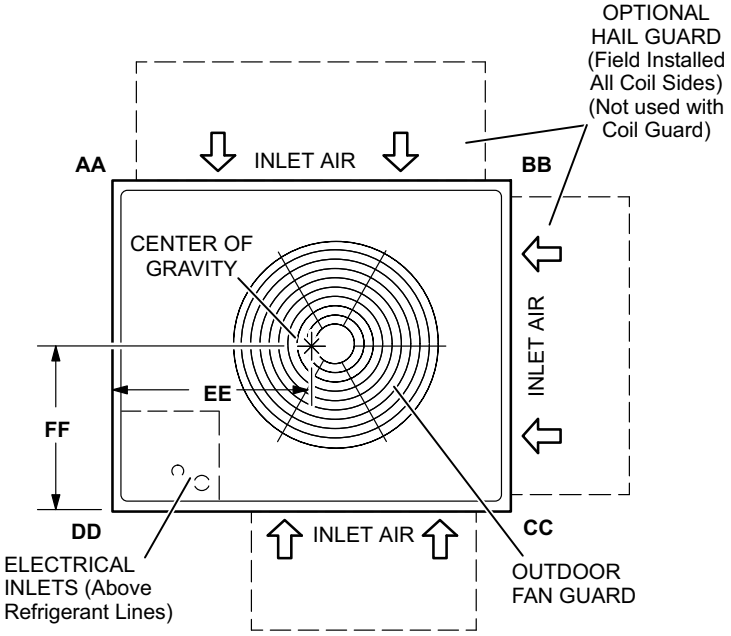
48 in. (1219 mm) clearance required on top of unit.

DIMENSIONS - INCHES (MM) — TSA072 AND TSA090

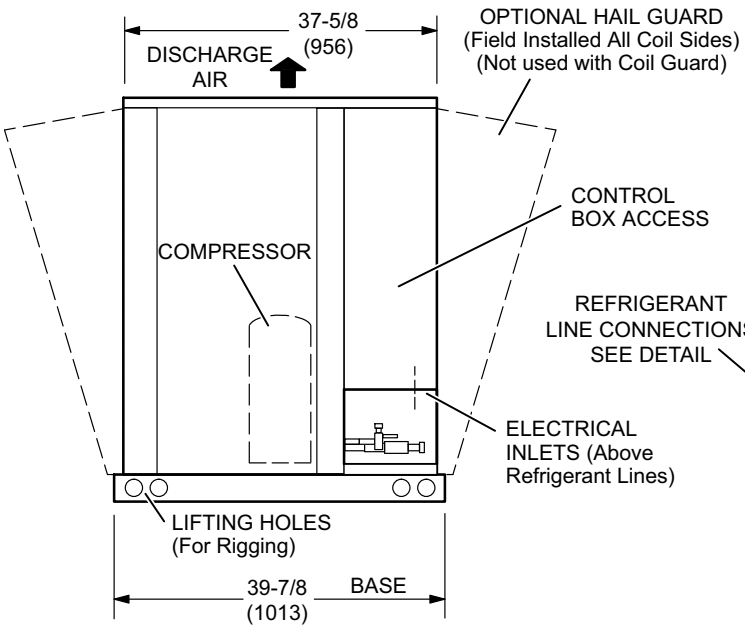
Model No.	CORNER WEIGHTS								CENTER OF GRAVITY			
	AA		BB		CC		DD		EE		FF	
	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg	in.	mm	in.	mm
TSA072S4S	73	33	67	30	78	35	85	39	33	584	18-1/2	470
TSA090S4S	86	39	93	42	92	42	85	39	25	635	20-1/4	514



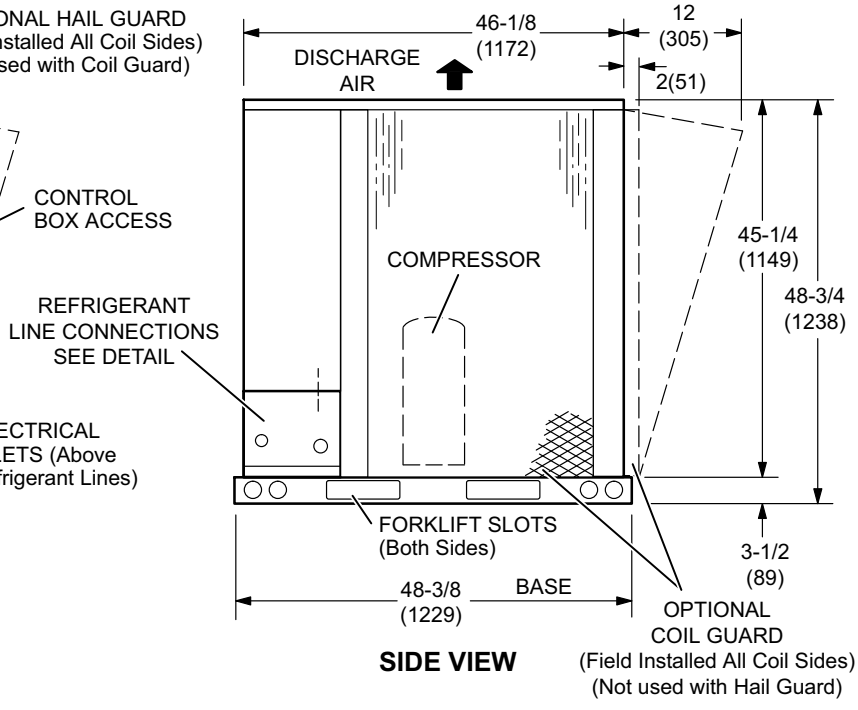
REFRIGERANT LINE CONNECTIONS DETAIL



TOP VIEW



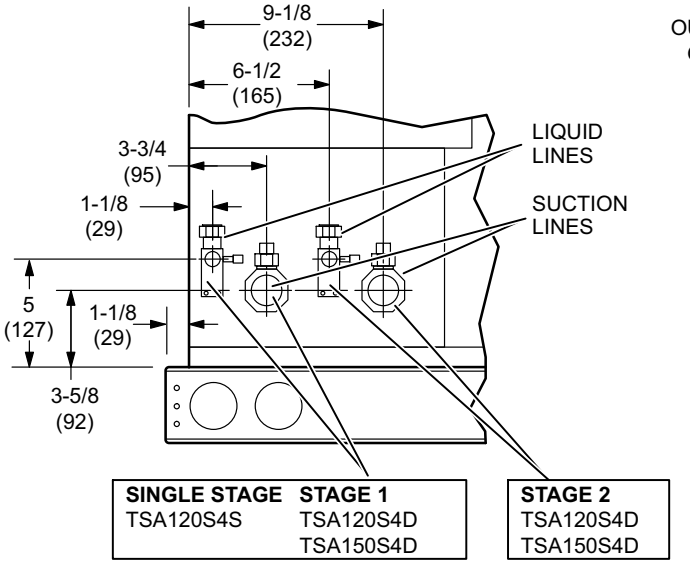
FRONT VIEW



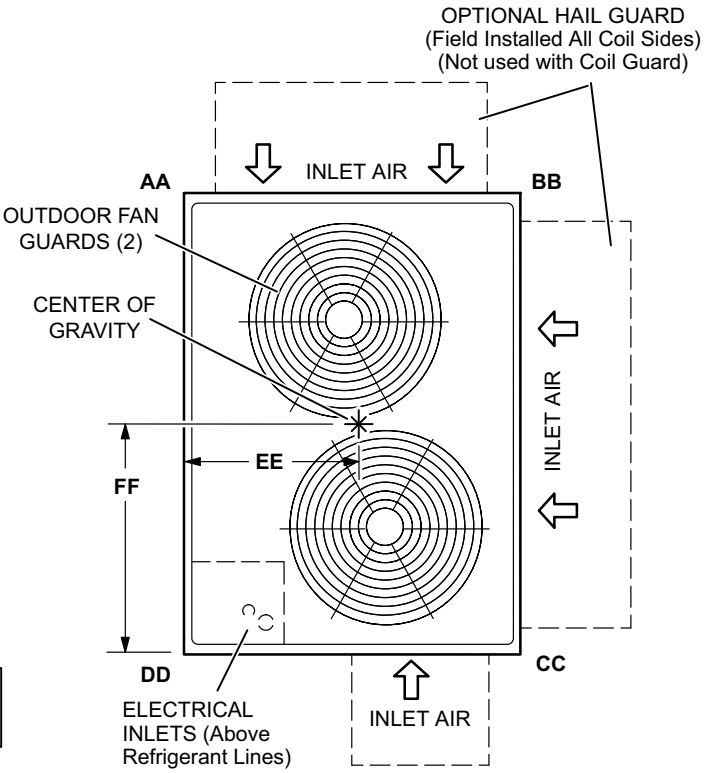
SIDE VIEW

DIMENSIONS - INCHES (MM) TSA120 AND TSA150

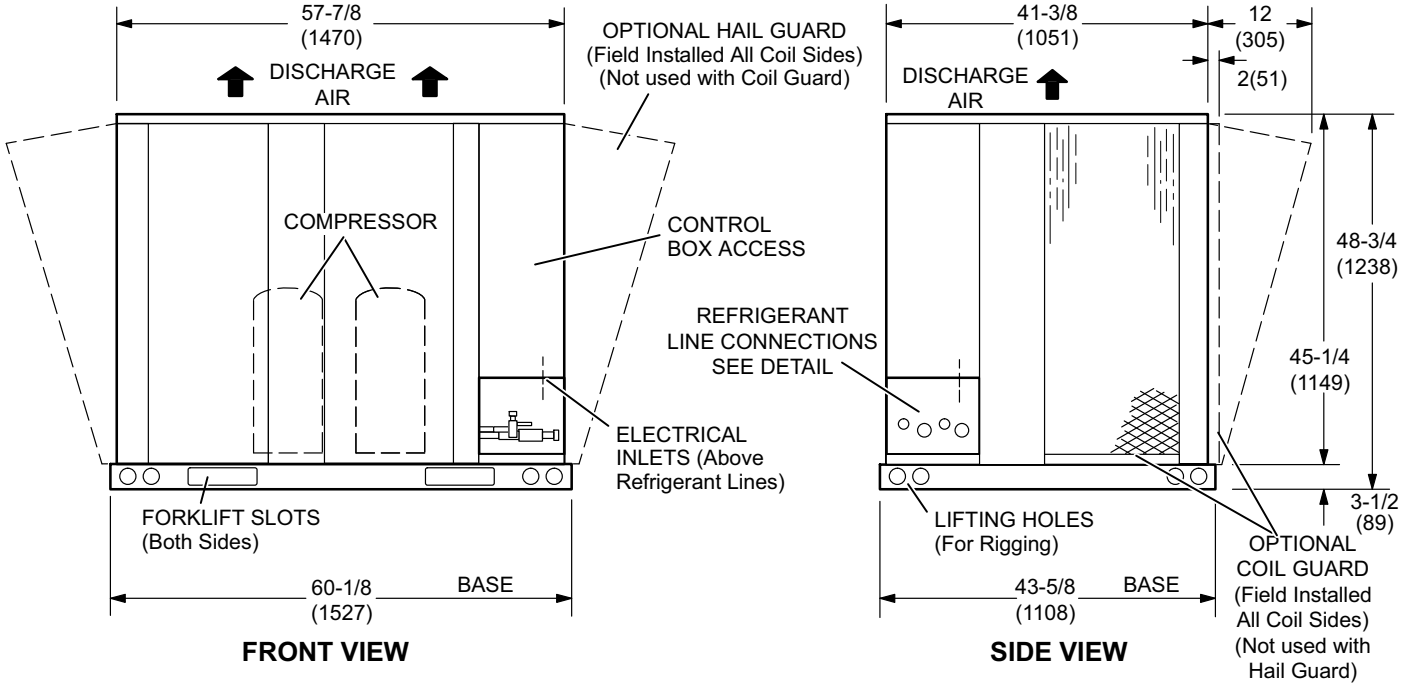
Model No.	CORNER WEIGHTS AA lbs.	AA kg	BB lbs.	BB kg	CC lbs.	CC kg	DD lbs.	DD kg	CENTER OF GRAVITY EE in.	EE mm	FF in.	FF mm
TSA120S4S	136	62	121	55	96	44	108	49	20-1/2	521	33-1/2	851
TSA120S4D	120	54	112	51	124	56	133	60	21	533	28-1/2	724
TSA150S4D	152	69	117	53	117	53	152	69	19	483	30	762



REFRIGERANT LINE CONNECTIONS DETAIL



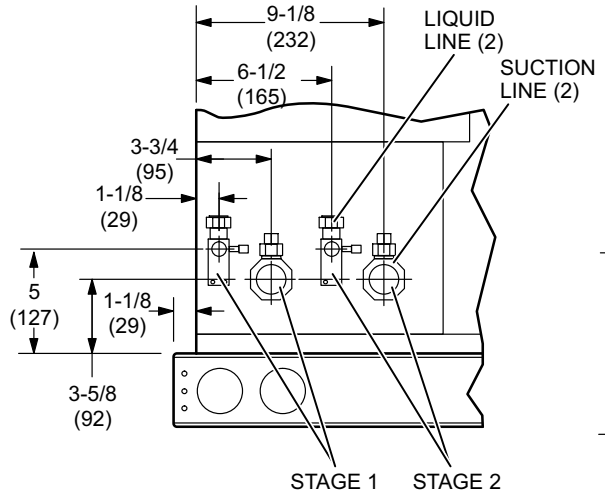
TOP VIEW



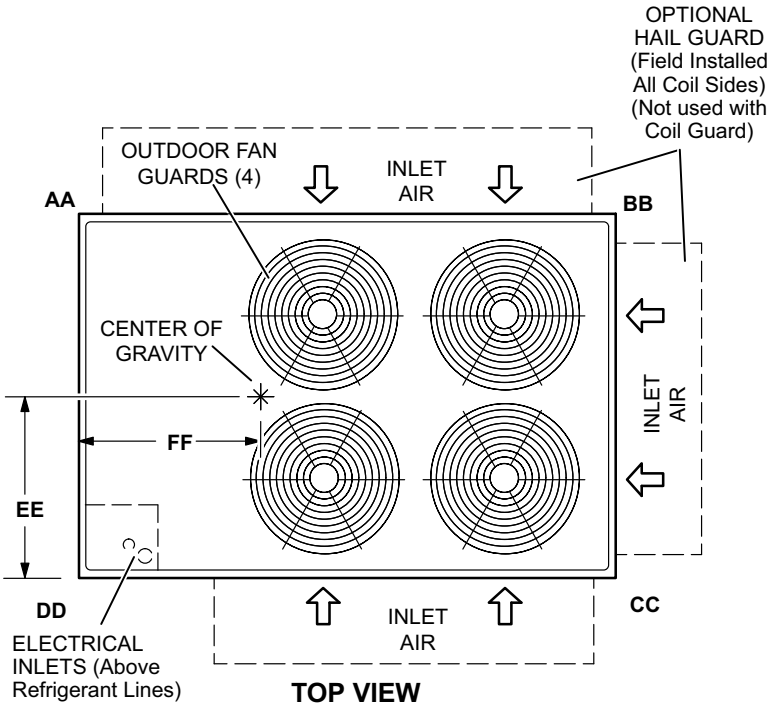
FRONT VIEW **SIDE VIEW**

DIMENSIONS - INCHES (MM) — TSA180 AND TSA240

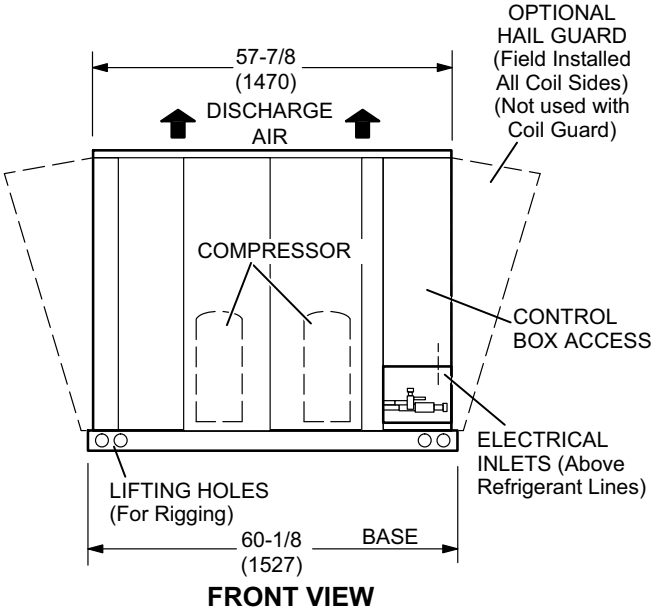
Model No.	CORNER WEIGHTS								CENTER OF GRAVITY			
	AA		BB		CC		DD		EE		FF	
	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg	in.	mm	in.	mm
TSA180S4D	223	101	166	75	178	81	238	108	29	737	38	965
TSA240S4D	265	120	197	89	197	89	265	120	30	762	38	965



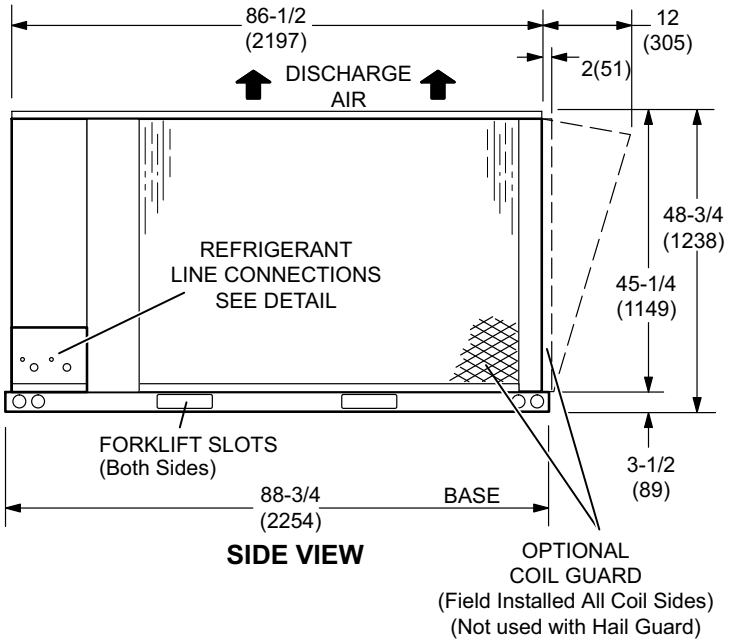
REFRIGERANT LINE CONNECTIONS DETAIL



TOP VIEW



FRONT VIEW



SIDE VIEW

NOTES: For Temperatures and Capacities not shown in tables, see bulletin - Cooling Unit Rating Table Correction Factor Data in Miscellaneous Engineering Data section.

AIR HANDLERS

COOLING CAPACITY - TSA072S4S with [CBX27UH-060]

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																							
			85°F (29°C)						95°F (35°C)						105°F (41°C)						115°F (46°C)					
			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb		
	cfm	L/s	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C
63°F (17°C)	1920	905	69.1	20.3	4.83	.68	.83	.98	66.2	19.4	5.37	.70	.86	1.00	62.8	18.4	5.97	.71	.89	1.00	59.1	17.3	6.66	.74	.93	1.00
	2400	1135	72.6	21.3	4.86	.73	.91	1.00	69.5	20.4	5.40	.75	.94	1.00	66.2	19.4	6.00	.77	.97	1.00	62.4	18.3	6.69	.80	1.00	1.00
	2880	1360	75.7	22.2	4.87	.78	.97	1.00	72.6	21.3	5.42	.80	1.00	1.00	68.9	20.2	6.01	.84	1.00	1.00	65.3	19.1	6.71	.88	1.00	1.00
67°F (19°C)	1920	905	72.7	21.3	4.86	.55	.66	.79	69.7	20.4	5.39	.55	.67	.81	66.1	19.4	5.99	.56	.69	.84	62.3	18.3	6.69	.57	.71	.88
	2400	1135	76.3	22.4	4.88	.57	.70	.87	72.9	21.4	5.41	.58	.72	.90	69.2	20.3	6.03	.59	.75	.93	65.0	19.0	6.71	.61	.78	.97
	2880	1360	79.0	23.2	4.90	.60	.75	.94	75.4	22.1	5.43	.61	.78	.97	71.5	21.0	6.04	.62	.81	1.00	67.2	19.7	6.74	.64	.85	1.00
71°F (22°C)	1920	905	76.3	22.4	4.88	.41	.53	.64	73.0	21.4	5.42	.42	.54	.65	69.5	20.4	6.02	.42	.55	.67	65.4	19.2	6.71	.42	.56	.69
	2400	1135	80.0	23.4	4.90	.42	.56	.68	76.4	22.4	5.44	.43	.57	.70	72.7	21.3	6.05	.44	.58	.72	68.3	20.0	6.74	.44	.60	.75
	2880	1360	82.7	24.2	4.91	.44	.59	.73	79.1	23.2	5.46	.44	.60	.75	75.0	22.0	6.07	.45	.61	.78	70.5	20.7	6.77	.46	.63	.82

COOLING CAPACITY - TSA072S4S with [CBX32M-060]

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																							
			85°F (29°C)						95°F (35°C)						105°F (41°C)						115°F (46°C)					
			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb		
	cfm	L/s	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C
63°F (17°C)	1920	905	69.2	20.3	4.84	.68	.82	.97	66.0	19.3	5.37	.69	.85	.99	62.5	18.3	5.97	.70	.87	1.00	58.7	17.2	6.65	.72	.91	1.00
	2400	1135	72.5	21.2	4.85	.72	.90	1.00	69.1	20.3	5.40	.74	.93	1.00	65.5	19.2	6.00	.76	.96	1.00	61.5	18.0	6.68	.79	.98	1.00
	2880	1360	75.0	22.0	4.87	.77	.96	1.00	71.6	21.0	5.41	.79	.98	1.00	67.8	19.9	6.01	.82	1.00	1.00	63.8	18.7	6.70	.85	1.00	1.00
67°F (19°C)	1920	905	73.0	21.4	4.86	.54	.65	.78	69.7	20.4	5.40	.55	.67	.80	66.0	19.3	6.00	.55	.68	.83	61.9	18.1	6.69	.56	.70	.87
	2400	1135	76.2	22.3	4.88	.56	.69	.86	72.6	21.3	5.41	.57	.71	.88	68.9	20.2	6.02	.58	.73	.92	64.7	19.0	6.70	.60	.76	.95
	2880	1360	78.8	23.1	4.90	.59	.74	.93	75.2	22.0	5.43	.60	.76	.95	71.2	20.9	6.04	.61	.79	.98	66.7	19.5	6.73	.62	.82	1.00
71°F (22°C)	1920	905	76.8	22.5	4.88	.41	.52	.63	73.5	21.5	5.42	.42	.53	.64	69.7	20.4	6.03	.42	.54	.66	65.5	19.2	6.71	.42	.55	.68
	2400	1135	80.3	23.5	4.91	.42	.55	.67	76.7	22.5	5.44	.43	.56	.69	72.7	21.3	6.05	.43	.57	.70	68.2	20.0	6.74	.44	.58	.73
	2880	1360	82.8	24.3	4.92	.43	.57	.71	78.9	23.1	5.46	.44	.59	.73	74.8	21.9	6.07	.44	.60	.76	70.1	20.5	6.76	.45	.62	.79

COOLING CAPACITY - TSA072S4S with [TAA072S4S]

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																							
			85°F (29°C)						95°F (35°C)						105°F (41°C)						115°F (46°C)					
			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb		
	cfm	L/s	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C
63°F (17°C)	1920	905	70.4	20.6	4.84	.68	.83	.99	67.2	19.7	5.38	.69	.86	1.00	63.7	18.7	5.98	.71	.89	1.00	59.7	17.5	6.67	.73	.93	1.00
	2400	1135	74.0	21.7	4.87	.73	.92	1.00	70.5	20.7	5.40	.75	.95	1.00	66.9	19.6	6.01	.77	.98	1.00	62.6	18.3	6.69	.80	1.00	1.00
	2880	1360	76.7	22.5	4.88	.78	.99	1.00	72.9	21.4	5.41	.80	1.00	1.00	69.4	20.3	6.02	.84	1.00	1.00	65.7	19.3	6.72	.87	1.00	1.00
67°F (19°C)	1920	905	74.2	21.7	4.86	.54	.66	.79	70.9	20.8	5.41	.55	.67	.81	67.0	19.6	6.01	.56	.69	.84	63.1	18.5	6.70	.57	.71	.88
	2400	1135	77.7	22.8	4.89	.57	.70	.87	74.1	21.7	5.43	.58	.72	.90	70.3	20.6	6.03	.59	.74	.94	65.9	19.3	6.72	.60	.77	.98
	2880	1360	80.4	23.6	4.90	.59	.75	.95	76.7	22.5	5.45	.61	.78	.98	72.5	21.2	6.05	.62	.81	1.00	68.0	19.9	6.74	.63	.84	1.00
71°F (22°C)	1920	905	78.4	23.0	4.89	.41	.53	.64	74.9	22.0	5.43	.41	.53	.65	71.1	20.8	6.04	.42	.55	.66	66.6	19.5	6.72	.42	.55	.68
	2400	1135	81.9	24.0	4.92	.42	.56	.68	78.1	22.9	5.45	.43	.56	.70	73.9	21.7	6.06	.43	.58	.72	69.4	20.3	6.75	.44	.59	.74
	2880	1360	84.3	24.7	4.93	.43	.58	.73	80.4	23.6	5.47	.44	.59	.75	76.1	22.3	6.08	.45	.61	.78	71.4	20.9	6.77	.45	.62	.81

NOTES: For Temperatures and Capacities not shown in tables, see bulletin - Cooling Unit Rating Table Correction Factor Data in Miscellaneous Engineering Data section.

UP-FLOW INDOOR COIL

COOLING CAPACITY - TSA072S4S with [CX34-62D-6F]

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																					
			85°F (29°C)						95°F (35°C)						105°F (41°C)						115°F (46°C)					
			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb		
	cfm	L/s	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C
63°F (17°C)	1920	905	69.7	20.4	4.84	.67	.81	.96	66.6	19.5	5.37	.68	.83	.99	63.1	18.5	5.98	.70	.86	1.00	59.2	17.3	6.65	.72	.90	1.00
	2400	1135	73.4	21.5	4.86	.71	.88	1.00	70.0	20.5	5.40	.73	.91	1.00	66.4	19.5	6.00	.75	.95	1.00	62.2	18.2	6.68	.78	.99	1.00
	2880	1360	76.1	22.3	4.87	.76	.95	1.00	72.4	21.2	5.42	.78	.98	1.00	68.6	20.1	6.02	.80	1.00	1.00	64.7	19.0	6.71	.84	1.00	1.00
67°F (19°C)	1920	905	73.4	21.5	4.86	.54	.65	.77	70.3	20.6	5.40	.54	.66	.79	66.6	19.5	6.00	.55	.67	.82	62.7	18.4	6.69	.56	.69	.85
	2400	1135	77.3	22.7	4.88	.56	.68	.84	73.8	21.6	5.42	.57	.70	.87	70.1	20.5	6.03	.57	.72	.90	65.7	19.3	6.71	.59	.75	.94
	2880	1360	80.2	23.5	4.90	.58	.73	.91	76.4	22.4	5.44	.59	.75	.94	72.4	21.2	6.05	.60	.77	.98	67.7	19.8	6.73	.62	.81	1.00
71°F (22°C)	1920	905	77.9	22.8	4.89	.41	.52	.63	74.5	21.8	5.43	.42	.53	.64	70.6	20.7	6.04	.42	.54	.65	66.3	19.4	6.72	.42	.55	.67
	2400	1135	81.5	23.9	4.91	.42	.55	.66	77.6	22.7	5.45	.42	.55	.68	73.5	21.5	6.06	.43	.56	.69	69.1	20.3	6.75	.44	.58	.72
	2880	1360	83.9	24.6	4.93	.43	.57	.70	80.1	23.5	5.47	.44	.58	.72	76.0	22.3	6.08	.44	.59	.75	71.4	20.9	6.77	.45	.61	.78

COOLING CAPACITY - TSA072S4S with [(2)CX34-43B/C-6F]

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																					
			85°F (29°C)						95°F (35°C)						105°F (41°C)						115°F (46°C)					
			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb		
	cfm	L/s	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C
63°F (17°C)	1920	905	72.1	21.1	4.86	.67	.82	.97	68.9	20.2	5.39	.68	.84	1.00	65.3	19.1	5.99	.70	.87	1.00	61.3	18.0	6.68	.72	.91	1.00
	2400	1135	76.0	22.3	4.88	.71	.89	1.00	72.4	21.2	5.42	.73	.92	1.00	68.4	20.0	6.02	.75	.96	1.00	64.1	18.8	6.70	.78	.99	1.00
	2880	1360	78.7	23.1	4.90	.76	.97	1.00	75.0	22.0	5.43	.78	.99	1.00	71.1	20.8	6.04	.81	1.00	1.00	67.2	19.7	6.73	.85	1.00	1.00
67°F (19°C)	1920	905	76.1	22.3	4.88	.54	.65	.77	72.4	21.2	5.41	.54	.66	.80	68.9	20.2	6.02	.55	.68	.82	64.8	19.0	6.71	.56	.69	.86
	2400	1135	80.1	23.5	4.90	.56	.69	.85	76.4	22.4	5.44	.57	.70	.88	72.4	21.2	6.05	.58	.73	.91	67.6	19.8	6.73	.59	.75	.95
	2880	1360	82.9	24.3	4.92	.58	.73	.92	78.9	23.1	5.46	.59	.75	.95	74.8	21.9	6.07	.60	.78	.99	70.0	20.5	6.75	.62	.81	1.00
71°F (22°C)	1920	905	80.2	23.5	4.90	.41	.52	.63	76.7	22.5	5.44	.41	.53	.64	72.6	21.3	6.04	.41	.53	.65	68.3	20.0	6.74	.42	.55	.67
	2400	1135	83.8	24.6	4.92	.42	.54	.67	79.9	23.4	5.46	.43	.56	.68	75.7	22.2	6.07	.43	.56	.70	71.2	20.9	6.77	.43	.58	.72
	2880	1360	86.7	25.4	4.94	.43	.57	.71	82.6	24.2	5.49	.44	.58	.72	78.3	22.9	6.09	.44	.59	.75	73.6	21.6	6.79	.44	.61	.78

HORIZONTAL INDOOR COILS

COOLING CAPACITY - TSA072S4S with [CH33-62D-2F]

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																					
			85°F (29°C)						95°F (35°C)						105°F (41°C)						115°F (46°C)					
			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb		
	cfm	L/s	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C
63°F (17°C)	1920	905	69.7	20.4	4.84	.67	.81	.96	66.6	19.5	5.37	.68	.83	.99	63.1	18.5	5.98	.70	.86	1.00	59.2	17.3	6.65	.72	.90	1.00
	2400	1135	73.4	21.5	4.86	.71	.88	1.00	70.0	20.5	5.40	.73	.91	1.00	66.4	19.5	6.00	.75	.95	1.00	62.2	18.2	6.68	.78	.99	1.00
	2880	1360	76.1	22.3	4.87	.76	.95	1.00	72.4	21.2	5.42	.78	.98	1.00	68.6	20.1	6.02	.80	1.00	1.00	64.7	19.0	6.71	.84	1.00	1.00
67°F (19°C)	1920	905	73.4	21.5	4.86	.54	.65	.77	70.3	20.6	5.40	.54	.66	.79	66.6	19.5	6.00	.55	.67	.82	62.7	18.4	6.69	.56	.69	.85
	2400	1135	77.3	22.7	4.88	.56	.68	.84	73.8	21.6	5.42	.57	.70	.87	70.1	20.5	6.03	.57	.72	.90	65.7	19.3	6.71	.59	.75	.94
	2880	1360	80.2	23.5	4.90	.58	.73	.91	76.4	22.4	5.44	.59	.75	.94	72.4	21.2	6.05	.60	.77	.98	67.7	19.8	6.73	.62	.81	1.00
71°F (22°C)	1920	905	77.9	22.8	4.89	.41	.52	.63	74.5	21.8	5.43	.42	.53	.64	70.6	20.7	6.04	.42	.54	.65	66.3	19.4	6.72	.42	.55	.67
	2400	1135	81.5	23.9	4.91	.42	.55	.66	77.6	22.7	5.45	.42	.55	.68	73.5	21.5	6.06	.43	.56	.69	69.1	20.3	6.75	.44	.58	.72
	2880	1360	83.9	24.6	4.93	.43	.57	.70	80.1	23.5	5.47	.44	.58	.72	76.0	22.3	6.08	.44	.59	.75	71.4	20.9	6.77	.45	.61	.78

NOTES: For Temperatures and Capacities not shown in tables, see bulletin - Cooling Unit Rating Table Correction Factor Data in Miscellaneous Engineering Data section.

AIR HANDLERS

COOLING CAPACITY - TSA090S4S with [TAA090S4D]

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																					
			85°F (29°C)						95°F (35°C)						105°F (41°C)						115°F (46°C)					
			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb		
	cfm	L/s	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C
63°F (17°C)	2400	1135	88.5	25.9	5.78	.68	.82	.97	84.7	24.8	6.40	.69	.84	.99	80.6	23.6	7.13	.71	.87	1.00	76.1	22.3	7.95	.73	.90	1.00
	3000	1415	92.7	27.2	5.86	.73	.90	1.00	88.5	25.9	6.48	.75	.93	1.00	84.0	24.6	7.20	.77	.96	1.00	79.1	23.2	8.02	.79	.99	1.00
	3600	1700	95.8	28.1	5.91	.79	.97	1.00	91.3	26.8	6.54	.80	.99	1.00	87.0	25.5	7.26	.83	1.00	1.00	82.5	24.2	8.10	.86	1.00	1.00
67°F (19°C)	2400	1135	93.5	27.4	5.87	.54	.65	.78	89.6	26.3	6.50	.54	.67	.80	85.3	25.0	7.22	.56	.69	.83	80.3	23.5	8.04	.57	.70	.86
	3000	1415	97.5	28.6	5.95	.57	.70	.86	93.4	27.4	6.58	.58	.72	.89	88.6	26.0	7.29	.59	.74	.92	83.3	24.4	8.11	.60	.77	.95
	3600	1700	100.7	29.5	6.01	.60	.76	.94	95.8	28.1	6.63	.60	.78	.97	91.1	26.7	7.34	.62	.81	.99	85.8	25.1	8.16	.64	.84	1.00
71°F (22°C)	2400	1135	98.5	28.9	5.97	.41	.52	.63	94.2	27.6	6.59	.42	.53	.65	89.8	26.3	7.32	.42	.54	.66	84.8	24.9	8.15	.42	.56	.68
	3000	1415	102.7	30.1	6.04	.43	.55	.69	98.2	28.8	6.68	.43	.57	.70	93.3	27.3	7.39	.43	.58	.72	87.8	25.7	8.20	.44	.58	.74
	3600	1700	105.8	31.0	6.10	.44	.59	.74	100.7	29.5	6.72	.44	.59	.75	95.6	28.0	7.44	.45	.61	.78	90.2	26.4	8.26	.45	.63	.81

COOLING CAPACITY - TSA090S4S with [TAA120S4D]

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																					
			85°F (29°C)						95°F (35°C)						105°F (41°C)						115°F (46°C)					
			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb		
	cfm	L/s	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C
63°F (17°C)	2400	1135	89.7	26.3	5.80	.68	.82	.97	85.6	25.1	6.43	.69	.84	.99	81.4	23.9	7.14	.70	.87	1.00	76.8	22.5	7.97	.73	.90	1.00
	3000	1415	93.9	27.5	5.88	.73	.91	1.00	89.5	26.2	6.50	.75	.94	1.00	85.1	24.9	7.22	.77	.97	1.00	80.1	23.5	8.04	.79	1.00	1.00
	3600	1700	97.0	28.4	5.94	.78	.98	1.00	92.7	27.2	6.56	.81	1.00	1.00	88.7	26.0	7.30	.83	1.00	1.00	84.1	24.6	8.13	.87	1.00	1.00
67°F (19°C)	2400	1135	94.9	27.8	5.89	.54	.65	.78	90.8	26.6	6.52	.55	.67	.80	86.0	25.2	7.24	.55	.68	.83	81.5	23.9	8.07	.56	.71	.86
	3000	1415	99.3	29.1	5.98	.57	.71	.87	94.8	27.8	6.60	.58	.72	.90	89.8	26.3	7.32	.59	.75	.93	84.4	24.7	8.13	.60	.77	.96
	3600	1700	102.1	29.9	6.03	.60	.76	.95	97.3	28.5	6.66	.61	.78	.98	92.3	27.1	7.37	.62	.81	1.00	87.0	25.5	8.19	.63	.85	1.00
71°F (22°C)	2400	1135	100.0	29.3	5.99	.41	.52	.63	95.6	28.0	6.63	.42	.53	.65	90.9	26.6	7.34	.42	.54	.67	85.8	25.1	8.17	.42	.55	.68
	3000	1415	104.9	30.7	6.09	.42	.56	.69	99.8	29.2	6.71	.43	.57	.70	94.8	27.8	7.42	.43	.58	.72	89.1	26.1	8.24	.43	.59	.74
	3600	1700	107.6	31.5	6.15	.44	.59	.73	102.3	30.0	6.77	.44	.59	.76	97.4	28.5	7.48	.45	.62	.79	91.5	26.8	8.29	.46	.63	.82

COOLING CAPACITY - (2) TSA090S4S (FIRST STAGE) with [TAA180S4D]

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																					
			65°F (18°C)						75°F (24°C)						85°F (29°C)						95°F (35°C)					
			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb		
	cfm	L/s	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C
63°F (17°C)	4800	2265	91.2	26.7	4.63	.67	.79	.93	88.1	25.8	5.13	.67	.81	.95	84.6	24.8	5.69	.69	.83	.97	80.8	23.7	6.32	.70	.85	.99
	6000	2830	95.6	28.0	4.70	.71	.86	1.00	92.2	27.0	5.20	.72	.88	1.00	88.4	25.9	5.76	.73	.90	1.00	84.4	24.7	6.39	.75	.93	1.00
	7200	3400	98.6	28.9	4.76	.75	.93	1.00	95.1	27.9	5.25	.76	.95	1.00	91.2	26.7	5.81	.78	.97	1.00	87.1	25.5	6.44	.80	.99	1.00
67°F (19°C)	4800	2265	95.9	28.1	4.71	.53	.64	.76	92.7	27.2	5.21	.54	.65	.77	89.1	26.1	5.77	.54	.66	.79	85.2	25.0	6.40	.55	.67	.81
	6000	2830	100.5	29.5	4.79	.56	.68	.83	96.9	28.4	5.29	.56	.69	.85	93.1	27.3	5.84	.57	.71	.87	88.7	26.0	6.47	.58	.72	.89
	7200	3400	103.7	30.4	4.85	.58	.72	.89	99.9	29.3	5.34	.59	.74	.91	95.9	28.1	5.90	.60	.76	.94	91.3	26.8	6.52	.61	.78	.96
71°F (22°C)	4800	2265	100.5	29.5	4.79	.42	.52	.62	97.2	28.5	5.29	.42	.52	.63	93.4	27.4	5.85	.42	.53	.64	89.3	26.2	6.48	.42	.54	.65
	6000	2830	105.2	30.8	4.88	.42	.54	.66	101.6	29.8	5.37	.42	.55	.67	97.5	28.6	5.93	.42	.56	.69	93.1	27.3	6.55	.43	.57	.70
	7200	3400	108.6	31.8	4.94	.43	.57	.70	104.6	30.7	5.43	.43	.58	.72	100.4	29.4	5.98	.44	.59	.73	95.9	28.1	6.61	.45	.60	.76

COOLING CAPACITY - (2) TSA090S4S (SECOND STAGE) with [TAA180S4D]

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																					
			85°F (29°C)						95°F (35°C)						105°F (41°C)						115°F (46°C)					
			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb		
	cfm	L/s	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C
63°F (17°C)	4800	2265	169.3	49.6	11.38	.69	.83	.97	161.7	47.4	12.63	.70	.85	.99	154.1	45.2	14.09	.71	.87	1.00	145.2	42.6	15.75	.73	.90	1.00
	6000	2830	176.9	51.8	11.51	.73	.90	1.00	168.8	49.5	12.77	.75	.93	1.00	160.4	47.0	14.21	.77	.95	1.00	151.1	44.3	15.84	.80	.99	1.00
	7200	3400	182.4	53.5	11.62	.78	.97	1.00	174.3	51.1	12.87	.80	.99	1.00	165.3	48.4	14.31	.83	1.00	1.00	157.0	46.0	15.97	.86	1.00	1.00
67°F (19°C)	4800	2265	178.2	52.2	11.54	.54	.66	.79	170.4	49.9	12.81	.55	.67	.81	161.9	47.4	14.23	.56	.69	.83	152.9	44.8	15.90	.57	.71	.87
	6000	2830	186.1	54.5	11.68	.57	.71	.87	177.4	52.0	12.93	.58	.72	.89	168.8	49.5	14.37	.59	.74	.92	158.9	46.6	16.03	.60	.77	.95
	7200	3400	191.7	56.2	11.79	.60	.76	.94	182.5	53.5	13.03	.61	.78	.96	173.3	50.8	14.47	.62	.81	.99	163.1	47.8	16.11	.64	.84	1.00
71°F (22°C)	4800	2265	186.7	54.7	11.70	.42	.53	.64	178.7	52.4	12.96	.42	.54	.65	170.0	49.8	14.40	.42	.55	.67	160.6	47.1	16.04	.43	.56	.69
	6000	2830	194.9	57.1	11.86	.42	.56	.69	186.2	54.6	13.11	.43	.57	.70	176.9	51.8	14.55	.44	.58	.72	167.1	49.0	16.19	.44	.59	.75
	7200	3400	200.8	58.8	11.97	.44	.59	.73	191.8	56.2	13.22	.45	.60	.76	182.1	53.4	14.64	.45	.61	.78	171.3	50.2	16.27	.45	.63	.82

NOTES: For Temperatures and Capacities not shown in tables, see bulletin - Cooling Unit Rating Table Correction Factor Data in Miscellaneous Engineering Data section.

UP-FLOW INDOOR COIL

COOLING CAPACITY - TSA090S4S with **[(2) CX34-49C-6F]**

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																					
			85°F (29°C)						95°F (35°C)						105°F (41°C)						115°F (46°C)					
			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb		
	cfm	L/s	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C
63°F (17°C)	2400	1135	87.5	25.6	5.76	.67	.81	.95	83.8	24.6	6.39	.69	.83	.97	79.7	23.4	7.11	.70	.85	1.00	75.3	22.1	7.94	.72	.88	1.00
	3000	1415	91.7	26.9	5.84	.71	.88	1.00	87.7	25.7	6.46	.73	.90	1.00	83.4	24.4	7.19	.75	.93	1.00	78.7	23.1	8.01	.78	.97	1.00
	3600	1700	95.1	27.9	5.90	.76	.95	1.00	90.8	26.6	6.53	.78	.98	1.00	86.3	25.3	7.24	.81	1.00	1.00	81.9	24.0	8.08	.84	1.00	1.00
67°F (19°C)	2400	1135	91.7	26.9	5.83	.54	.65	.77	87.8	25.7	6.47	.55	.66	.79	83.7	24.5	7.19	.55	.68	.81	79.2	23.2	8.02	.56	.69	.84
	3000	1415	96.3	28.2	5.92	.56	.69	.84	92.0	27.0	6.55	.57	.71	.87	87.6	25.7	7.27	.58	.73	.90	82.8	24.3	8.09	.60	.75	.93
	3600	1700	99.6	29.2	5.98	.59	.74	.91	95.1	27.9	6.61	.60	.76	.94	90.5	26.5	7.32	.61	.78	.97	85.3	25.0	8.15	.62	.81	1.00
71°F (22°C)	2400	1135	96.4	28.3	5.92	.42	.53	.63	92.1	27.0	6.55	.42	.53	.64	87.9	25.8	7.28	.42	.55	.65	83.0	24.3	8.10	.42	.55	.67
	3000	1415	100.6	29.5	6.01	.43	.55	.67	96.1	28.2	6.63	.43	.56	.69	91.6	26.8	7.35	.44	.57	.70	86.5	25.4	8.18	.44	.59	.73
	3600	1700	104.1	30.5	6.08	.44	.58	.71	99.5	29.2	6.71	.44	.59	.73	94.7	27.8	7.42	.45	.60	.76	89.2	26.1	8.23	.45	.62	.79

DOWN-FLOW INDOOR COILS

COOLING CAPACITY - TSA090S4S with **[(2) CR33-50/60C-F]**

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																					
			85°F (29°C)						95°F (35°C)						105°F (41°C)						115°F (46°C)					
			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb		
	cfm	L/s	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C
63°F (17°C)	2400	1135	86.1	25.2	5.73	.68	.81	.96	82.2	24.1	6.36	.69	.83	.98	78.3	22.9	7.08	.70	.86	1.00	73.8	21.6	7.91	.72	.89	1.00
	3000	1415	89.9	26.3	5.80	.72	.88	1.00	85.9	25.2	6.43	.74	.91	1.00	81.6	23.9	7.15	.76	.94	1.00	76.8	22.5	7.97	.78	.97	1.00
	3600	1700	92.7	27.2	5.85	.77	.95	1.00	88.5	25.9	6.48	.79	.98	1.00	84.3	24.7	7.20	.81	.99	1.00	80.1	23.5	8.04	.84	1.00	1.00
67°F (19°C)	2400	1135	90.7	26.6	5.82	.54	.66	.78	86.7	25.4	6.45	.55	.67	.80	82.6	24.2	7.17	.56	.68	.82	78.0	22.9	7.99	.57	.70	.85
	3000	1415	94.8	27.8	5.89	.57	.70	.85	90.6	26.6	6.52	.58	.71	.87	86.0	25.2	7.24	.59	.73	.90	81.2	23.8	8.07	.60	.76	.94
	3600	1700	97.8	28.7	5.95	.59	.74	.92	93.4	27.4	6.58	.60	.76	.95	88.5	25.9	7.29	.61	.79	.97	83.3	24.4	8.11	.63	.82	1.00
71°F (22°C)	2400	1135	95.2	27.9	5.90	.41	.53	.64	91.1	26.7	6.53	.42	.54	.65	86.8	25.4	7.26	.41	.55	.66	82.1	24.1	8.09	.42	.55	.68
	3000	1415	99.5	29.2	5.98	.42	.56	.68	95.2	27.9	6.61	.43	.57	.69	90.5	26.5	7.33	.43	.58	.71	85.5	25.1	8.16	.44	.59	.73
	3600	1700	102.8	30.1	6.05	.44	.58	.72	98.0	28.7	6.67	.44	.59	.74	93.2	27.3	7.39	.45	.61	.76	87.7	25.7	8.19	.45	.62	.79

HORIZONTAL INDOOR COILS

COOLING CAPACITY - TSA090S4S with **[(2) CH33-49C-2F]**

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																					
			85°F (29°C)						95°F (35°C)						105°F (41°C)						115°F (46°C)					
			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb		
	cfm	L/s	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C
63°F (17°C)	2400	1135	87.6	25.7	5.76	.67	.81	.95	83.7	24.5	6.39	.68	.83	.98	79.7	23.4	7.11	.70	.85	1.00	75.1	22.0	7.93	.71	.88	1.00
	3000	1415	91.7	26.9	5.83	.71	.88	1.00	87.6	25.7	6.46	.73	.91	1.00	83.4	24.4	7.19	.75	.93	1.00	78.5	23.0	8.01	.78	.97	1.00
	3600	1700	94.9	27.8	5.90	.76	.95	1.00	90.6	26.6	6.52	.78	.98	1.00	85.7	25.1	7.23	.80	1.00	1.00	81.6	23.9	8.07	.84	1.00	1.00
67°F (19°C)	2400	1135	92.4	27.1	5.85	.54	.65	.77	88.4	25.9	6.48	.54	.66	.79	84.1	24.6	7.20	.55	.67	.81	79.6	23.3	8.03	.56	.69	.84
	3000	1415	96.9	28.4	5.93	.56	.69	.84	92.5	27.1	6.56	.57	.71	.87	87.9	25.8	7.28	.58	.73	.90	82.8	24.3	8.10	.59	.75	.93
	3600	1700	99.9	29.3	5.99	.59	.74	.92	95.4	28.0	6.62	.60	.76	.94	90.4	26.5	7.33	.60	.78	.97	85.0	24.9	8.14	.62	.81	1.00
71°F (22°C)	2400	1135	97.0	28.4	5.94	.42	.52	.63	92.9	27.2	6.57	.42	.53	.64	88.4	25.9	7.29	.42	.54	.65	83.7	24.5	8.12	.42	.55	.67
	3000	1415	101.7	29.8	6.02	.42	.55	.67	97.2	28.5	6.66	.43	.56	.69	92.5	27.1	7.38	.43	.57	.70	87.2	25.6	8.20	.44	.58	.73
	3600	1700	105.0	30.8	6.09	.44	.58	.71	100.3	29.4	6.72	.44	.59	.74	95.2	27.9	7.43	.45	.60	.76	89.6	26.3	8.24	.45	.61	.79

NOTES: For Temperatures and Capacities not shown in tables, see bulletin - Cooling Unit Rating Table Correction Factor Data in Miscellaneous Engineering Data section.

AIR HANDLERS

COOLING CAPACITY - TSA120S4S with [TAA120S4D]

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																					
			85°F (29°C)						95°F (35°C)						105°F (41°C)						115°F (46°C)					
			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb		
	cfm	L/s	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C
63°F (17°C)	3200	1510	113.3	33.2	7.09	.71	.86	.99	108.4	31.8	7.90	.73	.88	1.00	103.1	30.2	8.82	.74	.90	1.00	97.4	28.5	9.86	.76	.93	1.00
	4000	1890	118.5	34.7	7.18	.77	.94	1.00	113.2	33.2	7.99	.79	.96	1.00	107.6	31.5	8.90	.81	.99	1.00	101.6	29.8	9.93	.83	1.00	1.00
	4800	2265	122.2	35.8	7.25	.82	1.00	1.00	117.2	34.3	8.06	.84	1.00	1.00	112.3	32.9	8.98	.87	1.00	1.00	106.6	31.2	10.03	.90	1.00	1.00
67°F (19°C)	3200	1510	120.0	35.2	7.21	.56	.69	.82	114.8	33.6	8.01	.58	.70	.84	109.3	32.0	8.93	.58	.72	.87	102.9	30.2	9.96	.59	.74	.90
	4000	1890	124.8	36.6	7.30	.60	.75	.91	119.5	35.0	8.10	.60	.76	.93	113.3	33.2	9.00	.62	.78	.96	106.6	31.2	10.03	.63	.81	.99
	4800	2265	128.5	37.7	7.37	.63	.80	.98	122.3	35.8	8.16	.64	.82	1.00	116.2	34.1	9.06	.65	.84	1.00	109.3	32.0	10.07	.67	.88	1.00
71°F (22°C)	3200	1510	126.2	37.0	7.33	.43	.55	.67	121.1	35.5	8.13	.43	.56	.68	114.9	33.7	9.03	.43	.57	.70	108.5	31.8	10.06	.44	.58	.71
	4000	1890	131.3	38.5	7.42	.44	.58	.72	125.6	36.8	8.23	.44	.59	.74	119.6	35.1	9.12	.45	.61	.76	112.5	33.0	10.13	.46	.62	.79
	4800	2265	135.0	39.6	7.51	.45	.62	.78	128.9	37.8	8.29	.46	.63	.80	122.5	35.9	9.18	.46	.64	.82	115.2	33.8	10.19	.47	.67	.86

COOLING CAPACITY - (2) TSA120S4S (FIRST STAGE) with [TAA240S4D]

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																					
			65°F (18°C)						75°F (24°C)						85°F (29°C)						95°F (35°C)					
			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb		
	cfm	L/s	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C
63°F (17°C)	6400	3020	120.0	35.2	5.69	.69	.82	.96	116.1	34.0	6.35	.70	.84	.98	111.7	32.7	7.06	.71	.86	.99	106.7	31.3	7.87	.72	.88	1.00
	8000	3775	125.6	36.8	5.79	.73	.89	1.00	121.0	35.5	6.43	.75	.92	1.00	116.4	34.1	7.14	.77	.94	1.00	110.7	32.4	7.95	.78	.96	1.00
	9600	4530	129.1	37.8	5.86	.78	.96	1.00	124.6	36.5	6.50	.80	.98	1.00	120.0	35.2	7.21	.82	1.00	1.00	114.7	33.6	8.01	.84	1.00	1.00
67°F (19°C)	6400	3020	126.8	37.2	5.81	.55	.67	.79	122.5	35.9	6.46	.56	.68	.80	117.8	34.5	7.18	.57	.69	.82	112.7	33.0	7.97	.57	.70	.84
	8000	3775	132.5	38.8	5.91	.58	.71	.86	127.8	37.5	6.55	.58	.73	.88	122.8	36.0	7.26	.60	.74	.90	117.2	34.3	8.06	.60	.76	.93
	9600	4530	136.6	40.0	5.99	.60	.77	.93	131.2	38.5	6.62	.61	.78	.95	126.1	37.0	7.33	.63	.80	.97	120.6	35.3	8.12	.64	.82	.99
71°F (22°C)	6400	3020	133.4	39.1	5.93	.43	.54	.64	128.7	37.7	6.57	.43	.54	.65	124.0	36.3	7.28	.43	.55	.67	118.6	34.8	8.09	.43	.55	.68
	8000	3775	139.1	40.8	6.04	.43	.56	.69	134.1	39.3	6.67	.44	.57	.70	129.1	37.8	7.38	.44	.58	.72	123.1	36.1	8.18	.44	.59	.74
	9600	4530	143.4	42.0	6.12	.45	.60	.74	137.9	40.4	6.75	.45	.60	.75	132.3	38.8	7.45	.45	.61	.78	126.7	37.1	8.25	.45	.63	.80

COOLING CAPACITY - (2) TSA120S4S (SECOND STAGE) with [TAA240S4D]

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																					
			85°F (29°C)						95°F (35°C)						105°F (41°C)						115°F (46°C)					
			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb		
	cfm	L/s	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C
63°F (17°C)	3200	1510	185.0	54.2	13.53	.62	.71	.79	178.4	52.3	15.19	.63	.71	.81	170.9	50.1	17.08	.63	.72	.82	162.4	47.6	19.23	.64	.74	.84
	8000	3775	232.7	68.2	14.29	.77	.94	1.00	221.5	64.9	15.89	.78	.96	1.00	211.4	62.0	17.74	.80	.99	1.00	199.4	58.4	19.79	.83	1.00	1.00
	4800	2265	208.9	61.2	13.90	.67	.78	.89	200.2	58.7	15.52	.67	.79	.92	190.9	55.9	17.39	.68	.81	.94	181.2	53.1	19.51	.70	.83	.97
67°F (19°C)	3200	1510	196.5	57.6	13.69	.51	.60	.67	189.6	55.6	15.36	.52	.60	.68	181.5	53.2	17.23	.52	.61	.69	172.5	50.6	19.38	.52	.61	.70
	8000	3775	245.7	72.0	14.53	.60	.74	.90	234.4	68.7	16.13	.60	.76	.93	223.4	65.5	17.94	.62	.78	.95	210.5	61.7	20.00	.63	.81	.99
	4800	2265	221.0	64.8	14.09	.54	.64	.74	212.3	62.2	15.72	.54	.65	.75	202.2	59.3	17.56	.55	.66	.77	191.7	56.2	19.68	.55	.67	.79
71°F (22°C)	3200	1510	207.7	60.9	13.87	.42	.49	.57	200.5	58.8	15.53	.41	.50	.57	192.1	56.3	17.40	.42	.50	.58	182.3	53.4	19.53	.41	.50	.59
	8000	3775	258.1	75.6	14.76	.44	.58	.72	246.3	72.2	16.35	.44	.59	.74	234.9	68.8	18.17	.45	.61	.76	221.7	65.0	20.22	.46	.62	.78
	4800	2265	232.6	68.2	14.30	.42	.52	.62	223.8	65.6	15.93	.42	.53	.62	213.3	62.5	17.76	.42	.53	.64	201.9	59.2	19.84	.43	.54	.65

UP-FLOW INDOOR COIL

COOLING CAPACITY - TSA120S4S with [(2) CX34-62D-6F]

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																					
			85°F (29°C)						95°F (35°C)						105°F (41°C)						115°F (46°C)					
			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb		
	cfm	L/s	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C
63°F (17°C)	3200	1510	110.8	32.5	7.05	.70	.84	.97	106.3	31.2	7.86	.71	.85	.99	101.3	29.7	8.79	.73	.88	1.00	95.9	28.1	9.84	.74	.90	1.00
	4000	1890	116.2	34.1	7.15	.74	.90	1.00	111.2	32.6	7.95	.76	.93	1.00	106.0	31.1	8.87	.78	.95	1.00	100.1	29.3	9.91	.80	.99	1.00
	4800	2265	120.2	35.2	7.21	.79	.97	1.00	114.9	33.7	8.01	.81	.99	1.00	109.3	32.0	8.93	.83	1.00	1.00	103.9	30.5	9.98	.86	1.00	1.00
67°F (19°C)	3200	1510	116.7	34.2	7.16	.56	.68	.80	111.8	32.8	7.96	.56	.69	.82	106.5	31.2	8.88	.57	.70	.84	100.6	29.5	9.91	.58	.72	.87
	4000	1890	122.0	35.8	7.24	.58	.72	.87	116.8	34.2	8.05	.59	.73	.89	111.2	32.6	8.96	.60	.75	.92	105.1	30.8	10.00	.62	.78	.95
	4800	2265	126.0	36.9	7.33	.61	.77	.94	120.5	35.3	8.12	.62	.79	.96	114.6	33.6	9.03	.63	.81	.99	108.0	31.7	10.05	.65	.84	1.00
71°F (22°C)	3200	1510	123.1	36.1	7.27	.43	.54	.66	117.9	34.6	8.07	.43	.55	.67	112.4	32.9	8.99	.44	.56	.68	106.5	31.2	10.03	.44	.57	.70
	4000	1890	128.6	37.7	7.37	.44	.57	.70	123.1	36.1	8.17	.44	.58	.72	117.2	34.3	9.08	.45	.59	.73	110.6	32.4	10.10	.45	.61	.76
	4800	2265	132.7	38.9	7.45	.45	.60	.75	126.7	37.1	8.24	.46	.61	.77	120.5	35.3	9.14	.46	.63	.79	113.5	33.3	10.15	.47	.64	.82

NOTES: For Temperatures and Capacities not shown in tables, see bulletin - Cooling Unit Rating Table Correction Factor Data in Miscellaneous Engineering Data section.

DOWN-FLOW INDOOR COILS

COOLING CAPACITY - TSA120S4S with [(2) CR33-50/60C-2F]

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																					
			85°F (29°C)						95°F (35°C)						105°F (41°C)						115°F (46°C)					
			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb		
	cfm	L/s	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C
63°F (17°C)	3200	1510	107.9	31.6	7.00	.71	.84	.98	103.4	30.3	7.81	.72	.86	.99	98.5	28.9	8.74	.73	.89	1.00	93.1	27.3	9.79	.75	.91	1.00
	4000	1890	112.7	33.0	7.08	.75	.91	1.00	107.7	31.6	7.89	.77	.94	1.00	102.4	30.0	8.81	.79	.96	1.00	96.7	28.3	9.85	.81	.98	1.00
	4800	2265	115.9	34.0	7.13	.80	.97	1.00	111.0	32.5	7.94	.82	.99	1.00	106.1	31.1	8.87	.84	1.00	1.00	100.7	29.5	9.92	.87	1.00	1.00
67°F (19°C)	3200	1510	114.0	33.4	7.11	.57	.69	.81	109.1	32.0	7.92	.57	.70	.83	103.9	30.5	8.83	.58	.71	.85	98.4	28.8	9.88	.59	.73	.88
	4000	1890	118.8	34.8	7.19	.59	.73	.88	113.7	33.3	7.99	.60	.74	.90	108.1	31.7	8.90	.61	.76	.93	102.1	29.9	9.94	.63	.79	.96
	4800	2265	122.4	35.9	7.25	.62	.78	.95	117.0	34.3	8.06	.63	.79	.97	111.0	32.5	8.96	.64	.82	.99	104.7	30.7	9.99	.66	.85	1.00
71°F (22°C)	3200	1510	119.6	35.1	7.20	.43	.55	.67	114.7	33.6	8.01	.43	.56	.68	109.2	32.0	8.93	.44	.57	.69	103.5	30.3	9.97	.44	.58	.71
	4000	1890	124.6	36.5	7.30	.44	.58	.71	119.5	35.0	8.10	.45	.59	.72	113.7	33.3	9.01	.45	.60	.74	107.3	31.4	10.04	.45	.62	.77
	4800	2265	128.5	37.7	7.37	.45	.61	.75	122.9	36.0	8.17	.46	.62	.77	116.8	34.2	9.07	.46	.63	.80	110.2	32.3	10.10	.47	.65	.82

HORIZONTAL INDOOR COILS

COOLING CAPACITY - TSA120S4S with [(2) CH33-62D-2F]

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																					
			85°F (29°C)						95°F (35°C)						105°F (41°C)						115°F (46°C)					
			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb		
	cfm	L/s	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C
63°F (17°C)	3200	1510	109.7	32.1	7.03	.70	.83	.96	105.1	30.8	7.84	.71	.84	.98	100.3	29.4	8.77	.72	.86	1.00	95.0	27.8	9.81	.74	.89	1.00
	4000	1890	114.9	33.7	7.12	.74	.89	1.00	110.1	32.3	7.93	.75	.91	1.00	104.8	30.7	8.85	.77	.94	1.00	99.0	29.0	9.89	.79	.97	1.00
	4800	2265	118.8	34.8	7.19	.78	.95	1.00	113.5	33.3	8.00	.79	.98	1.00	108.0	31.7	8.90	.82	1.00	1.00	102.1	29.9	9.94	.84	1.00	1.00
67°F (19°C)	3200	1510	115.2	33.8	7.13	.56	.67	.79	110.5	32.4	7.94	.56	.68	.81	105.3	30.9	8.86	.57	.70	.83	100.0	29.3	9.91	.58	.71	.85
	4000	1890	121.0	35.5	7.23	.58	.71	.85	115.7	33.9	8.03	.59	.73	.87	110.2	32.3	8.94	.60	.74	.90	104.1	30.5	9.98	.61	.77	.94
	4800	2265	124.8	36.6	7.30	.60	.75	.92	119.4	35.0	8.11	.61	.77	.94	113.8	33.4	9.01	.63	.79	.97	107.2	31.4	10.03	.64	.82	1.00
71°F (22°C)	3200	1510	121.3	35.5	7.24	.43	.54	.65	116.4	34.1	8.04	.43	.55	.66	111.1	32.6	8.96	.44	.56	.67	105.3	30.9	10.00	.44	.57	.69
	4000	1890	126.9	37.2	7.34	.44	.57	.69	121.8	35.7	8.14	.44	.58	.71	115.9	34.0	9.06	.45	.59	.72	109.5	32.1	10.08	.45	.60	.75
	4800	2265	131.2	38.5	7.43	.45	.59	.73	125.5	36.8	8.22	.45	.60	.75	119.4	35.0	9.12	.46	.62	.77	112.5	33.0	10.14	.47	.63	.80

NOTES: For Temperatures and Capacities not shown in tables, see bulletin - Cooling Unit Rating Table Correction Factor Data in Miscellaneous Engineering Data section.

AIR HANDLERS

COOLING CAPACITY - TSA120S4D (FIRST STAGE) with [TAA120S4D]

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil: 65°F (18°C)						75°F (24°C)						85°F (29°C)						95°F (35°C)					
			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb		
	cfm	L/s	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C
63°F (17°C)	3200	1510	61.7	18.1	2.72	.65	.78	.94	59.4	17.4	3.08	.66	.80	.96	56.8	16.6	3.49	.67	.82	.99	54.2	15.9	3.95	.68	.85	1.00
	4000	1890	64.7	19.0	2.76	.69	.87	1.00	62.1	18.2	3.11	.70	.89	1.00	59.4	17.4	3.52	.72	.92	1.00	56.6	16.6	3.97	.74	.95	1.00
	4800	2265	66.9	19.6	2.79	.74	.95	1.00	64.3	18.8	3.14	.76	.97	1.00	61.6	18.1	3.55	.78	.99	1.00	58.7	17.2	4.01	.81	1.00	1.00
67°F (19°C)	3200	1510	65.3	19.1	2.77	.52	.62	.74	62.8	18.4	3.12	.52	.63	.75	60.2	17.6	3.53	.53	.64	.78	57.5	16.9	3.99	.54	.66	.80
	4000	1890	68.5	20.1	2.80	.54	.67	.82	65.7	19.3	3.16	.55	.68	.84	62.8	18.4	3.56	.55	.69	.87	59.9	17.6	4.03	.57	.71	.91
	4800	2265	70.6	20.7	2.83	.56	.71	.91	67.8	19.9	3.19	.57	.73	.93	64.8	19.0	3.59	.59	.76	.96	61.6	18.1	4.04	.59	.78	.99
71°F (22°C)	3200	1510	68.9	20.2	2.81	.40	.50	.60	66.3	19.4	3.17	.40	.51	.61	63.5	18.6	3.57	.40	.51	.62	60.7	17.8	4.04	.40	.52	.64
	4000	1890	72.2	21.2	2.84	.41	.53	.65	69.3	20.3	3.21	.41	.54	.66	66.2	19.4	3.61	.41	.54	.67	63.2	18.5	4.07	.41	.56	.69
	4800	2265	74.4	21.8	2.87	.41	.55	.69	71.5	21.0	3.24	.42	.56	.71	68.3	20.0	3.64	.42	.58	.73	65.0	19.0	4.10	.43	.59	.75

COOLING CAPACITY - TSA120S4D (SECOND STAGE) with [TAA120S4D]

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil: 85°F (29°C)						95°F (35°C)						105°F (41°C)						115°F (46°C)					
			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb		
	cfm	L/s	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C
63°F (17°C)	3200	1510	113.6	33.3	6.99	.67	.82	.99	108.2	31.7	7.91	.68	.85	1.00	102.5	30.0	8.99	.69	.88	1.00	96.4	28.3	10.22	.72	.92	1.00
	4000	1890	118.9	34.8	7.04	.72	.92	1.00	113.1	33.1	7.95	.74	.95	1.00	107.3	31.4	9.03	.77	.98	1.00	100.8	29.5	10.28	.80	1.00	1.00
	4800	2265	123.1	36.1	7.10	.78	.99	1.00	117.3	34.4	8.02	.81	1.00	1.00	112.0	32.8	9.11	.84	1.00	1.00	105.6	30.9	10.37	.88	1.00	1.00
67°F (19°C)	3200	1510	120.5	35.3	7.06	.53	.64	.78	114.9	33.7	7.99	.54	.66	.80	108.8	31.9	9.06	.54	.68	.84	102.4	30.0	10.30	.56	.70	.87
	4000	1890	125.6	36.8	7.12	.56	.69	.87	119.7	35.1	8.06	.57	.71	.91	113.3	33.2	9.12	.58	.74	.94	105.9	31.0	10.34	.59	.77	.98
	4800	2265	129.6	38.0	7.18	.59	.76	.96	123.2	36.1	8.09	.60	.78	.99	116.3	34.1	9.16	.61	.81	1.00	108.8	31.9	10.38	.63	.85	1.00
71°F (22°C)	3200	1510	127.0	37.2	7.15	.40	.51	.62	121.3	35.5	8.08	.40	.52	.64	114.8	33.6	9.15	.41	.53	.65	108.0	31.7	10.39	.41	.54	.67
	4000	1890	132.4	38.8	7.22	.41	.54	.67	126.5	37.1	8.15	.41	.56	.69	119.4	35.0	9.22	.42	.57	.71	112.1	32.9	10.45	.43	.58	.75
	4800	2265	136.5	40.0	7.29	.42	.58	.73	129.9	38.1	8.21	.43	.59	.75	122.7	36.0	9.27	.43	.60	.78	115.1	33.7	10.52	.44	.63	.83

UP-FLOW INDOOR COIL

COOLING CAPACITY - TSA120S4D (FIRST STAGE) with [(2) CX34-60D-6F]

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil: 65°F (18°C)						75°F (24°C)						85°F (29°C)						95°F (35°C)					
			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb		
	cfm	L/s	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C
63°F (17°C)	3200	1510	59.2	17.3	2.70	.64	.77	.91	57.1	16.7	3.06	.65	.78	.93	54.9	16.1	3.47	.66	.80	.96	52.5	15.4	3.93	.67	.82	.99
	4000	1890	62.3	18.3	2.73	.67	.83	.99	60.0	17.6	3.09	.68	.85	1.00	57.5	16.9	3.50	.70	.88	1.00	54.9	16.1	3.96	.72	.91	1.00
	4800	2265	64.7	19.0	2.76	.71	.89	1.00	62.2	18.2	3.12	.73	.92	1.00	59.6	17.5	3.52	.75	.95	1.00	56.8	16.6	3.98	.77	.99	1.00
67°F (19°C)	3200	1510	62.7	18.4	2.74	.52	.62	.73	60.5	17.7	3.10	.52	.63	.74	58.1	17.0	3.50	.53	.63	.76	55.5	16.3	3.96	.53	.65	.78
	4000	1890	65.7	19.3	2.77	.53	.65	.79	63.4	18.6	3.13	.54	.66	.81	60.8	17.8	3.53	.55	.67	.84	58.0	17.0	4.00	.56	.69	.86
	4800	2265	68.1	20.0	2.80	.55	.69	.85	65.4	19.2	3.16	.56	.69	.88	62.5	18.3	3.56	.57	.72	.91	59.8	17.5	4.02	.58	.74	.95
71°F (22°C)	3200	1510	66.2	19.4	2.78	.40	.50	.59	63.8	18.7	3.14	.40	.50	.60	61.4	18.0	3.55	.40	.51	.61	58.6	17.2	4.01	.41	.52	.62
	4000	1890	69.5	20.4	2.81	.41	.52	.63	67.0	19.6	3.18	.41	.53	.64	64.2	18.8	3.58	.41	.53	.66	61.2	17.9	4.04	.42	.54	.67
	4800	2265	71.9	21.1	2.84	.42	.54	.67	69.2	20.3	3.21	.42	.55	.67	66.2	19.4	3.61	.42	.56	.70	63.1	18.5	4.08	.43	.57	.72

COOLING CAPACITY - TSA120S4D (SECOND STAGE) with [(2) CX34-60D-6F]

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil: 85°F (29°C)						95°F (35°C)						105°F (41°C)						115°F (46°C)					
			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb		
	cfm	L/s	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C
63°F (17°C)	3200	1510	109.8	32.2	6.94	.66	.80	.96	104.9	30.7	7.86	.67	.82	.99	99.5	29.2	8.94	.68	.85	1.00	93.8	27.5	10.20	.70	.89	1.00
	4000	1890	115.1	33.7	7.00	.70	.88	1.00	109.8	32.2	7.93	.72	.91	1.00	104.1	30.5	8.99	.74	.94	1.00	98.1	28.8	10.24	.77	.98	1.00
	4800	2265	119.2	34.9	7.04	.75	.95	1.00	113.6	33.3	7.97	.77	.99	1.00	107.6	31.5	9.05	.80	1.00	1.00	101.9	29.9	10.30	.84	1.00	1.00
67°F (19°C)	3200	1510	116.1	34.0	7.01	.53	.63	.76	111.0	32.5	7.93	.53	.65	.78	105.5	30.9	9.02	.54	.66	.81	99.3	29.1	10.28	.55	.68	.85
	4000	1890	121.5	35.6	7.06	.55	.67	.84	115.9	34.0	8.01	.56	.69	.86	109.8	32.2	9.08	.57	.71	.90	103.2	30.2	10.33	.58	.74	.94
	4800	2265	125.0	36.6	7.13	.57	.72	.91	119.5	35.0	8.05	.58	.75	.95	112.9	33.1	9.12	.59	.77	.98	106.3	31.2	10.35	.61	.81	1.00
71°F (22°C)	3200	1510	122.7	36.0	7.10	.40	.51	.61	117.3	34.4	8.02	.41	.52	.62	111.3	32.6	9.07	.41	.52	.64	105.0	30.8	10.35	.41	.54	.66
	4000	1890	128.4	37.6	7.16	.41	.53	.66	122.3	35.8	8.08	.42	.54	.67	116.1	34.0	9.16	.42	.56	.69	109.1	32.0	10.40	.43	.57	.72
	4800	2265	132.4	38.8	7.23	.42	.56	.70	126.2	37.0	8.16	.43	.57	.72	119.5	35.0	9.21	.43	.59	.75	112.1	32.9	10.43	.44	.60	.78

NOTES: For Temperatures and Capacities not shown in tables, see bulletin - Cooling Unit Rating Table Correction Factor Data in Miscellaneous Engineering Data section.

UP-FLOW INDOOR COIL

COOLING CAPACITY - TSA120S4D (FIRST STAGE) with [(2) CX34-62D-6F]

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																							
			65°F (18°C)						75°F (24°C)						85°F (29°C)						95°F (35°C)					
			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb		
	cfm	L/s	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C
63°F (17°C)	3200	1510	59.9	17.6	2.71	.64	.76	.91	57.8	16.9	3.07	.65	.78	.93	55.5	16.3	3.47	.66	.80	.96	53.0	15.5	3.93	.67	.82	.99
	4000	1890	63.0	18.5	2.74	.67	.83	.99	60.8	17.8	3.10	.68	.85	1.00	58.2	17.1	3.51	.70	.88	1.00	55.5	16.3	3.96	.72	.91	1.00
	4800	2265	65.5	19.2	2.77	.71	.90	1.00	63.0	18.5	3.13	.73	.92	1.00	60.4	17.7	3.53	.75	.95	1.00	57.5	16.9	3.99	.77	.98	1.00
67°F (19°C)	3200	1510	63.2	18.5	2.74	.52	.62	.72	61.0	17.9	3.10	.52	.63	.74	58.5	17.1	3.50	.53	.63	.76	55.9	16.4	3.97	.53	.65	.78
	4000	1890	66.5	19.5	2.78	.53	.65	.79	63.8	18.7	3.13	.54	.66	.81	61.2	17.9	3.54	.55	.67	.83	58.5	17.1	4.01	.56	.69	.87
	4800	2265	68.9	20.2	2.81	.55	.68	.85	66.2	19.4	3.17	.56	.70	.88	63.4	18.6	3.57	.57	.72	.91	60.4	17.7	4.03	.58	.75	.95
71°F (22°C)	3200	1510	66.8	19.6	2.78	.40	.50	.59	64.4	18.9	3.14	.40	.50	.60	61.9	18.1	3.56	.40	.51	.61	59.1	17.3	4.02	.41	.52	.63
	4000	1890	70.2	20.6	2.82	.41	.52	.63	67.6	19.8	3.18	.41	.53	.64	64.8	19.0	3.58	.41	.53	.66	61.7	18.1	4.05	.42	.54	.67
	4800	2265	72.7	21.3	2.85	.42	.54	.66	69.9	20.5	3.22	.42	.55	.68	66.9	19.6	3.62	.42	.56	.69	63.7	18.7	4.08	.43	.57	.72

COOLING CAPACITY - TSA120S4D (SECOND STAGE) with [(2) CX34-62D-6F]

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																							
			85°F (29°C)						95°F (35°C)						105°F (41°C)						115°F (46°C)					
			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb		
	cfm	L/s	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C
63°F (17°C)	3200	1510	111.0	32.5	6.94	.66	.80	.96	105.9	31.0	7.87	.67	.82	.99	100.6	29.5	8.95	.68	.85	1.00	94.8	27.8	10.22	.70	.89	1.00
	4000	1890	116.3	34.1	7.02	.70	.88	1.00	111.1	32.6	7.93	.72	.91	1.00	105.4	30.9	9.01	.74	.94	1.00	99.1	29.0	10.28	.77	.98	1.00
	4800	2265	120.7	35.4	7.06	.75	.95	1.00	115.0	33.7	7.98	.77	.98	1.00	108.9	31.9	9.07	.80	1.00	1.00	103.0	30.2	10.31	.83	1.00	1.00
67°F (19°C)	3200	1510	116.9	34.3	7.01	.53	.63	.76	111.7	32.7	7.94	.53	.65	.78	106.0	31.1	9.02	.54	.66	.81	99.8	29.2	10.27	.55	.68	.84
	4000	1890	122.4	35.9	7.09	.55	.67	.83	116.9	34.3	8.02	.56	.69	.87	110.9	32.5	9.10	.57	.71	.90	104.3	30.6	10.34	.58	.74	.94
	4800	2265	126.8	37.2	7.15	.57	.72	.91	120.8	35.4	8.07	.58	.75	.95	114.5	33.6	9.14	.59	.77	.98	107.4	31.5	10.38	.61	.81	1.00
71°F (22°C)	3200	1510	123.7	36.3	7.12	.40	.51	.61	118.1	34.6	8.04	.41	.52	.63	112.1	32.9	9.11	.41	.52	.64	105.7	31.0	10.35	.41	.53	.66
	4000	1890	129.5	38.0	7.17	.41	.53	.66	123.4	36.2	8.10	.42	.54	.67	117.2	34.3	9.19	.42	.56	.68	110.1	32.3	10.43	.43	.57	.71
	4800	2265	133.8	39.2	7.24	.42	.56	.69	127.4	37.3	8.17	.43	.57	.72	120.5	35.3	9.24	.43	.59	.75	113.0	33.1	10.45	.44	.60	.78

DOWN-FLOW INDOOR COILS

COOLING CAPACITY - TSA120S4D (FIRST STAGE) with [(2) CR33-50/60C-2F]

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																							
			65°F (18°C)						75°F (24°C)						85°F (29°C)						95°F (35°C)					
			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb		
	cfm	L/s	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C
63°F (17°C)	3200	1510	58.5	17.1	2.70	.65	.77	.92	56.4	16.5	3.06	.66	.79	.95	54.2	15.9	3.46	.66	.81	.97	51.6	15.1	3.91	.68	.83	.99
	4000	1890	61.3	18.0	2.72	.68	.84	.99	59.0	17.3	3.08	.69	.87	1.00	56.5	16.6	3.49	.70	.89	1.00	53.9	15.8	3.95	.72	.92	1.00
	4800	2265	63.3	18.6	2.74	.72	.91	1.00	60.9	17.8	3.11	.74	.94	1.00	58.2	17.1	3.50	.75	.96	1.00	55.5	16.3	3.97	.78	.98	1.00
67°F (19°C)	3200	1510	61.8	18.1	2.73	.52	.62	.73	59.5	17.4	3.09	.52	.63	.75	57.2	16.8	3.49	.53	.64	.77	54.6	16.0	3.96	.54	.65	.79
	4000	1890	64.8	19.0	2.76	.54	.66	.80	62.3	18.3	3.12	.55	.67	.82	59.7	17.5	3.52	.56	.68	.85	57.0	16.7	3.98	.56	.70	.88
	4800	2265	67.0	19.6	2.79	.56	.69	.87	64.3	18.8	3.14	.57	.71	.90	61.6	18.1	3.55	.58	.73	.92	58.7	17.2	4.01	.59	.75	.96
71°F (22°C)	3200	1510	65.0	19.0	2.76	.40	.50	.60	62.6	18.3	3.12	.40	.51	.61	60.1	17.6	3.52	.40	.52	.62	57.5	16.9	3.99	.40	.52	.63
	4000	1890	68.1	20.0	2.80	.41	.53	.64	65.6	19.2	3.16	.41	.54	.65	62.9	18.4	3.56	.41	.54	.66	59.9	17.6	4.02	.42	.55	.68
	4800	2265	70.4	20.6	2.82	.42	.55	.67	67.7	19.8	3.19	.42	.56	.69	64.8	19.0	3.59	.43	.57	.70	61.8	18.1	4.05	.43	.58	.73

COOLING CAPACITY - TSA120S4D (SECOND STAGE) with [(2) CR33-50/60C-2F]

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																							
			85°F (29°C)						95°F (35°C)						105°F (41°C)						115°F (46°C)					
			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb		
	cfm	L/s	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C
63°F (17°C)	3200	1510	108.3	31.7	6.93	.66	.81	.97	103.2	30.2	7.84	.68	.84	.99	98.0	28.7	8.93	.69	.86	1.00	92.2	27.0	10.17	.71	.90	1.00
	4000	1890	113.1	33.1	6.98	.70	.89	1.00	107.7	31.6	7.90	.72	.92	1.00	102.1	29.9	8.99	.75	.95	1.00	95.9	28.1	10.23	.78	.98	1.00
	4800	2265	116.4	34.1	7.01	.76	.96	1.00	111.0	32.5	7.95	.78	.98	1.00	105.6	30.9	9.02	.81	1.00	1.00	99.9	29.3	10.26	.84	1.00	1.00
67°F (19°C)	3200	1510	114.4	33.5	6.99	.53	.64	.77	109.2	32.0	7.92	.54	.65	.79	103.7	30.4	8.97	.55	.67	.82	97.6	28.6	10.25	.56	.69	.86
	4000	1890	119.4	35.0	7.04	.56	.68	.85	113.9	33.4	7.97	.56	.70	.88	108.0	31.7	9.06	.58	.72	.91	101.5	29.7	10.29	.59	.75	.95
	4800	2265	123.2	36.1	7.10	.58	.73	.92	117.4	34.4	8.02	.59	.75	.96	111.0	32.5	9.10	.60	.78	.98	104.1	30.5	10.31	.62	.82	1.00
71°F (22°C)	3200	1510	120.2	35.2	7.06	.40	.52	.62	115.0	33.7	7.99	.40	.52	.63	109.2	32.0	9.08	.41	.53	.65	102.8	30.1	10.29	.41	.54	.67
	4000	1890	125.7	36.8	7.13	.41	.54	.66	119.8	35.1	8.04	.42	.55	.68	113.7	33.3	9.13	.42	.56	.69	107.0	31.4	10.36	.43	.58	.72
	4800	2265	129.6	38.0	7.19	.43	.57	.70	123.5	36.2	8.11	.43	.58	.73	116.9	34.3	9.17	.43	.59	.75	109.8	32.2	10.42	.44	.61	.79

NOTES: For Temperatures and Capacities not shown in tables, see bulletin - Cooling Unit Rating Table Correction Factor Data in Miscellaneous Engineering Data section.

HORIZONTAL INDOOR COILS

COOLING CAPACITY - TSA120S4D (FIRST STAGE) with [(2) CH33-62D-2F]

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																					
			65°F (18°C)						75°F (24°C)						85°F (29°C)						95°F (35°C)					
			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb		
	cfm	L/s	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C
63°F (17°C)	3200	1510	59.2	17.3	2.70	.64	.76	.89	57.1	16.7	3.06	.64	.77	.92	54.9	16.1	3.47	.65	.79	.94	52.5	15.4	3.93	.66	.81	.97
	4000	1890	62.4	18.3	2.73	.67	.82	.98	60.0	17.6	3.09	.68	.84	1.00	57.6	16.9	3.49	.69	.86	1.00	55.0	16.1	3.96	.71	.89	1.00
	4800	2265	64.8	19.0	2.76	.70	.88	1.00	62.3	18.3	3.12	.72	.90	1.00	59.6	17.5	3.52	.73	.93	1.00	56.8	16.6	3.98	.76	.96	1.00
67°F (19°C)	3200	1510	62.4	18.3	2.73	.51	.61	.72	60.1	17.6	3.09	.52	.62	.73	57.7	16.9	3.49	.52	.63	.75	55.2	16.2	3.95	.53	.64	.77
	4000	1890	65.7	19.3	2.77	.53	.64	.78	63.1	18.5	3.13	.54	.66	.80	60.7	17.8	3.54	.54	.67	.82	57.9	17.0	3.99	.55	.68	.85
	4800	2265	68.3	20.0	2.80	.55	.68	.84	65.6	19.2	3.16	.56	.69	.86	62.8	18.4	3.56	.56	.71	.89	59.9	17.6	4.02	.58	.73	.92
71°F (22°C)	3200	1510	65.7	19.3	2.77	.40	.50	.59	63.5	18.6	3.13	.40	.50	.60	61.0	17.9	3.54	.40	.51	.61	58.3	17.1	4.00	.41	.51	.62
	4000	1890	69.3	20.3	2.81	.41	.52	.62	66.7	19.5	3.17	.41	.52	.63	64.0	18.8	3.58	.41	.53	.65	60.9	17.8	4.04	.42	.54	.66
	4800	2265	71.8	21.0	2.84	.42	.54	.66	69.1	20.3	3.20	.42	.54	.67	66.1	19.4	3.61	.42	.55	.68	63.0	18.5	4.07	.43	.56	.70

COOLING CAPACITY - TSA120S4D (SECOND STAGE) with [(2) CH33-62D-2F]

Entering Wet Bulb Tempera-ture	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																					
			85°F (29°C)						95°F (35°C)						105°F (41°C)						115°F (46°C)					
			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb		
	cfm	L/s	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C
63°F (17°C)	3200	1510	109.7	32.1	6.94	.65	.79	.94	104.9	30.7	7.86	.66	.81	.97	99.5	29.2	8.94	.68	.84	1.00	93.8	27.5	10.20	.69	.87	1.00
	4000	1890	115.2	33.8	6.99	.69	.86	1.00	110.0	32.2	7.93	.71	.89	1.00	104.1	30.5	9.01	.73	.92	1.00	97.9	28.7	10.24	.76	.96	1.00
	4800	2265	119.1	34.9	7.04	.73	.93	1.00	113.6	33.3	7.96	.76	.96	1.00	107.6	31.5	9.03	.78	.99	1.00	101.2	29.7	10.27	.82	1.00	1.00
67°F (19°C)	3200	1510	115.4	33.8	6.99	.52	.63	.75	110.3	32.3	7.91	.53	.64	.77	104.9	30.7	9.00	.54	.65	.80	98.6	28.9	10.27	.55	.67	.83
	4000	1890	121.4	35.6	7.08	.54	.67	.82	115.8	33.9	8.00	.55	.68	.85	110.0	32.2	9.08	.56	.70	.88	103.3	30.3	10.34	.57	.73	.92
	4800	2265	125.6	36.8	7.13	.56	.71	.89	119.7	35.1	8.05	.58	.73	.92	113.4	33.2	9.12	.59	.76	.96	106.5	31.2	10.36	.60	.79	1.00
71°F (22°C)	3200	1510	121.9	35.7	7.08	.40	.51	.61	116.6	34.2	8.00	.41	.51	.62	110.7	32.4	9.09	.41	.52	.63	104.4	30.6	10.34	.41	.53	.65
	4000	1890	127.9	37.5	7.16	.41	.53	.65	121.8	35.7	8.08	.42	.54	.66	115.7	33.9	9.17	.42	.55	.68	108.9	31.9	10.42	.43	.56	.70
	4800	2265	132.2	38.7	7.23	.42	.55	.68	126.0	36.9	8.15	.43	.56	.70	119.4	35.0	9.21	.43	.58	.73	112.2	32.9	10.47	.44	.59	.76

NOTES: For Temperatures and Capacities not shown in tables, see bulletin - Cooling Unit Rating Table Correction Factor Data in Miscellaneous Engineering Data section.

AIR HANDLERS

COOLING CAPACITY - TSA150S4D (FIRST STAGE) with [TAA120S4D]

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																							
			65°F (18°C)						75°F (24°C)						85°F (29°C)						95°F (35°C)					
			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb		
	cfm	L/s	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C
63°F (17°C)	3200	1510	72.0	21.1	3.62	.65	.76	.89	69.5	20.4	4.04	.65	.77	.91	66.7	19.5	4.49	.66	.79	.93	63.8	18.7	5.01	.67	.81	.95
	4000	1890	76.0	22.3	3.63	.68	.82	.97	73.3	21.5	4.05	.69	.84	.98	70.4	20.6	4.50	.70	.86	1.00	67.1	19.7	5.01	.72	.88	1.00
	4800	2265	78.9	23.1	3.65	.72	.89	1.00	76.0	22.3	4.06	.73	.91	1.00	73.1	21.4	4.51	.75	.93	1.00	69.6	20.4	5.02	.77	.96	1.00
67°F (19°C)	3200	1510	76.4	22.4	3.63	.52	.62	.72	73.9	21.7	4.05	.52	.63	.74	71.0	20.8	4.51	.53	.64	.75	67.8	19.9	5.01	.53	.64	.77
	4000	1890	80.5	23.6	3.65	.54	.65	.78	77.8	22.8	4.06	.55	.66	.80	74.6	21.9	4.51	.55	.67	.82	71.4	20.9	5.02	.56	.69	.84
	4800	2265	83.5	24.5	3.66	.56	.69	.85	80.8	23.7	4.07	.57	.71	.86	77.7	22.8	4.52	.57	.72	.89	73.9	21.7	5.02	.58	.74	.91
71°F (22°C)	3200	1510	80.6	23.6	3.65	.40	.50	.60	78.1	22.9	4.06	.41	.51	.60	75.3	22.1	4.52	.41	.51	.61	72.0	21.1	5.02	.41	.52	.62
	4000	1890	85.1	24.9	3.67	.42	.52	.63	82.2	24.1	4.07	.41	.53	.64	79.1	23.2	4.53	.42	.54	.65	75.6	22.2	5.03	.42	.54	.66
	4800	2265	88.2	25.8	3.68	.42	.54	.67	85.3	25.0	4.08	.42	.55	.68	81.9	24.0	4.53	.42	.56	.70	78.2	22.9	5.04	.43	.57	.71

COOLING CAPACITY - TSA150S4D (SECOND STAGE) with [TAA120S4D]

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																							
			85°F (29°C)						95°F (35°C)						105°F (41°C)						115°F (46°C)					
			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb		
	cfm	L/s	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C
63°F (17°C)	3200	1510	133.5	39.1	8.99	.66	.79	.93	127.7	37.4	10.01	.67	.81	.95	120.9	35.4	11.18	.68	.84	.98	113.5	33.3	12.50	.70	.86	1.00
	4000	1890	140.7	41.2	9.01	.70	.86	1.00	134.1	39.3	10.02	.72	.88	1.00	127.3	37.3	11.19	.74	.91	1.00	119.3	35.0	12.53	.77	.95	1.00
	4800	2265	146.1	42.8	9.02	.75	.93	1.00	139.2	40.8	10.04	.77	.96	1.00	132.2	38.7	11.19	.80	.98	1.00	124.0	36.3	12.51	.83	1.00	1.00
67°F (19°C)	3200	1510	142.0	41.6	9.01	.53	.64	.75	135.6	39.7	10.02	.53	.64	.77	128.9	37.8	11.17	.54	.66	.79	121.4	35.6	12.52	.55	.68	.82
	4000	1890	149.3	43.8	9.02	.55	.67	.82	142.9	41.9	10.04	.56	.69	.84	135.4	39.7	11.19	.57	.71	.87	127.0	37.2	12.51	.58	.73	.91
	4800	2265	155.3	45.5	9.04	.57	.72	.89	147.8	43.3	10.05	.58	.74	.91	140.3	41.1	11.21	.60	.77	.95	131.4	38.5	12.53	.61	.80	.98
71°F (22°C)	3200	1510	150.5	44.1	9.03	.41	.51	.61	144.0	42.2	10.04	.41	.52	.62	136.9	40.1	11.19	.41	.53	.63	128.7	37.7	12.50	.42	.53	.65
	4000	1890	158.2	46.4	9.05	.42	.54	.65	151.2	44.3	10.07	.42	.54	.66	143.6	42.1	11.21	.42	.56	.68	135.0	39.6	12.53	.43	.57	.70
	4800	2265	163.8	48.0	9.06	.43	.56	.70	156.3	45.8	10.07	.43	.57	.71	148.5	43.5	11.23	.43	.58	.74	139.8	41.0	12.56	.43	.60	.77

COOLING CAPACITY - TSA150S4D (FIRST STAGE) with [TAA150S4D]

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																							
			65°F (18°C)						75°F (24°C)						85°F (29°C)						95°F (35°C)					
			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb		
	cfm	L/s	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C
63°F (17°C)	4000	1890	75.2	22.0	3.63	.68	.81	.96	72.8	21.3	4.05	.69	.83	.98	69.9	20.5	4.50	.69	.85	1.00	66.8	19.6	5.01	.71	.87	1.00
	5000	2360	78.9	23.1	3.64	.71	.89	1.00	76.3	22.4	4.06	.73	.91	1.00	73.4	21.5	4.51	.75	.94	1.00	70.2	20.6	5.02	.76	.96	1.00
	6000	2830	82.2	24.1	3.65	.77	.96	1.00	79.4	23.3	4.07	.78	.98	1.00	76.4	22.4	4.52	.81	1.00	1.00	73.1	21.4	5.03	.83	1.00	1.00
67°F (19°C)	4000	1890	80.2	23.5	3.65	.54	.65	.77	77.6	22.7	4.06	.54	.66	.79	74.6	21.9	4.51	.55	.67	.81	71.2	20.9	5.02	.56	.68	.83
	5000	2360	83.9	24.6	3.66	.56	.69	.85	81.1	23.8	4.07	.57	.71	.87	78.0	22.9	4.52	.58	.72	.89	74.2	21.7	5.03	.59	.74	.92
	6000	2830	86.7	25.4	3.67	.59	.74	.92	83.6	24.5	4.08	.60	.76	.94	80.3	23.5	4.53	.61	.78	.97	76.6	22.4	5.04	.62	.80	.99
71°F (22°C)	4000	1890	85.1	24.9	3.67	.41	.52	.63	82.4	24.1	4.07	.41	.53	.64	79.2	23.2	4.53	.41	.53	.65	75.8	22.2	5.03	.41	.54	.66
	5000	2360	89.0	26.1	3.68	.42	.55	.67	86.0	25.2	4.09	.42	.56	.68	82.8	24.3	4.53	.43	.57	.70	79.0	23.2	5.04	.43	.58	.71
	6000	2830	91.9	26.9	3.69	.43	.58	.72	88.9	26.1	4.09	.43	.59	.73	85.2	25.0	4.54	.44	.60	.75	81.4	23.9	5.05	.45	.61	.77

COOLING CAPACITY - TSA150S4D (SECOND STAGE) with [TAA150S4D]

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																							
			85°F (29°C)						95°F (35°C)						105°F (41°C)						115°F (46°C)					
			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb		
	cfm	L/s	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C
63°F (17°C)	4000	1890	139.9	41.0	9.00	.69	.85	1.00	133.5	39.1	10.02	.71	.87	1.00	126.8	37.2	11.18	.73	.90	1.00	119.2	34.9	12.52	.75	.94	1.00
	5000	2360	146.8	43.0	9.03	.75	.94	1.00	140.5	41.2	10.03	.76	.96	1.00	133.1	39.0	11.21	.79	.99	1.00	125.7	36.8	12.54	.83	1.00	1.00
	6000	2830	152.8	44.8	9.03	.81	1.00	1.00	146.2	42.8	10.05	.83	1.00	1.00	139.4	40.9	11.21	.86	1.00	1.00	132.2	38.7	12.53	.90	1.00	1.00
67°F (19°C)	4000	1890	149.1	43.7	9.03	.55	.67	.81	142.4	41.7	10.03	.56	.68	.83	135.2	39.6	11.20	.57	.70	.86	127.1	37.2	12.54	.58	.72	.89
	5000	2360	156.0	45.7	9.05	.58	.72	.89	148.5	43.5	10.05	.59	.74	.92	140.9	41.3	11.21	.60	.76	.95	132.2	38.7	12.53	.62	.80	.99
	6000	2830	160.6	47.1	9.06	.61	.78	.97	153.3	44.9	10.07	.62	.80	.99	145.0	42.5	11.24	.63	.83	1.00	136.1	39.9	12.55	.65	.87	1.00
71°F (22°C)	4000	1890	158.4	46.4	9.05	.41	.53	.65	151.6	44.4	10.06	.41	.54	.66	144.2	42.3	11.23	.42	.55	.68	135.6	39.7	12.56	.43	.56	.70
	5000	2360	165.5	48.5	9.07	.43	.57	.70	158.0	46.3	10.08	.43	.58	.71	150.2	44.0	11.24	.43	.59	.73	141.0	41.3	12.56	.44	.60	.77
	6000	2830	170.3	49.9	9.08	.44	.60	.75	162.7	47.7	10.09	.45	.61	.77	154.4	45.3	11.25	.46	.63	.80	145.2	42.6	12.57	.47	.65	.84

NOTES: For Temperatures and Capacities not shown in tables, see bulletin - Cooling Unit Rating Table Correction Factor Data in Miscellaneous Engineering Data section.

AIR HANDLERS

COOLING CAPACITY - TSA150S4D (FIRST STAGE) with [TAA180S4D]

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																					
			65°F (18°C)						75°F (24°C)						85°F (29°C)						95°F (35°C)					
			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb		
	cfm	L/s	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C
63°F (17°C)	4000	1890	75.3	22.1	3.63	.68	.81	.96	72.8	21.3	4.05	.69	.83	.98	69.9	20.5	4.50	.70	.85	1.00	66.7	19.5	5.01	.71	.87	1.00
	5000	2360	79.0	23.2	3.64	.72	.89	1.00	76.3	22.4	4.06	.73	.91	1.00	73.1	21.4	4.51	.75	.94	1.00	69.7	20.4	5.01	.77	.96	1.00
	6000	2830	81.9	24.0	3.65	.77	.96	1.00	79.2	23.2	4.07	.78	.98	1.00	75.8	22.2	4.52	.81	1.00	1.00	72.6	21.3	5.02	.83	1.00	1.00
67°F (19°C)	4000	1890	79.5	23.3	3.64	.54	.65	.77	76.9	22.5	4.06	.54	.66	.79	73.9	21.7	4.52	.55	.68	.81	70.7	20.7	5.02	.56	.69	.83
	5000	2360	83.5	24.5	3.66	.56	.70	.85	80.7	23.7	4.07	.57	.71	.87	77.5	22.7	4.52	.58	.72	.89	73.8	21.6	5.02	.59	.74	.92
	6000	2830	86.4	25.3	3.67	.59	.74	.92	83.3	24.4	4.07	.60	.76	.94	80.0	23.4	4.53	.61	.78	.97	76.1	22.3	5.03	.62	.80	.99
71°F (22°C)	4000	1890	83.8	24.6	3.66	.41	.52	.63	81.0	23.7	4.07	.41	.53	.64	77.9	22.8	4.52	.42	.54	.65	74.5	21.8	5.03	.42	.54	.66
	5000	2360	87.9	25.8	3.68	.42	.55	.67	85.0	24.9	4.08	.43	.56	.69	81.7	23.9	4.54	.43	.57	.70	78.0	22.9	5.03	.43	.58	.72
	6000	2830	91.0	26.7	3.69	.43	.58	.72	87.7	25.7	4.09	.43	.59	.73	84.3	24.7	4.54	.44	.60	.75	80.5	23.6	5.05	.45	.61	.77

COOLING CAPACITY - TSA150S4D (SECOND STAGE) with [TAA180S4D]

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																					
			85°F (29°C)						95°F (35°C)						105°F (41°C)						115°F (46°C)					
			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb		
	cfm	L/s	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C
63°F (17°C)	4000	1890	139.7	40.9	9.00	.70	.85	1.00	133.4	39.1	10.03	.71	.87	1.00	126.3	37.0	11.18	.73	.91	1.00	118.4	34.7	12.49	.75	.94	1.00
	5000	2360	146.3	42.9	9.03	.75	.94	1.00	139.5	40.9	10.03	.77	.96	1.00	132.4	38.8	11.19	.79	.99	1.00	124.5	36.5	12.51	.83	1.00	1.00
	6000	2830	151.6	44.4	9.04	.81	1.00	1.00	145.1	42.5	10.04	.83	1.00	1.00	138.2	40.5	11.20	.86	1.00	1.00	130.7	38.3	12.52	.90	1.00	1.00
67°F (19°C)	4000	1890	147.9	43.3	9.03	.55	.68	.81	141.3	41.4	10.03	.56	.69	.83	134.1	39.3	11.20	.56	.70	.86	125.7	36.8	12.51	.58	.72	.90
	5000	2360	155.0	45.4	9.04	.58	.72	.89	147.6	43.3	10.05	.59	.74	.92	140.3	41.1	11.21	.60	.76	.95	131.4	38.5	12.53	.62	.80	.99
	6000	2830	160.0	46.9	9.05	.61	.78	.97	152.3	44.6	10.07	.62	.80	.99	144.5	42.3	11.23	.64	.83	1.00	135.3	39.7	12.55	.65	.87	1.00
71°F (22°C)	4000	1890	155.9	45.7	9.04	.42	.54	.65	149.0	43.7	10.05	.42	.54	.66	141.6	41.5	11.22	.43	.55	.68	133.2	39.0	12.53	.43	.57	.70
	5000	2360	163.5	47.9	9.07	.43	.57	.70	156.0	45.7	10.07	.43	.58	.72	147.9	43.3	11.22	.44	.59	.74	139.1	40.8	12.56	.44	.61	.77
	6000	2830	168.6	49.4	9.07	.44	.60	.75	161.1	47.2	10.09	.45	.61	.77	152.7	44.8	11.24	.44	.63	.80	143.5	42.1	12.58	.45	.64	.84

NOTES: For Temperatures and Capacities not shown in tables, see bulletin - Cooling Unit Rating Table Correction Factor Data in Miscellaneous Engineering Data section.

AIR HANDLERS

COOLING CAPACITY - TSA180S4D (FIRST STAGE) with [TAA180S4D]

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																							
			65°F (18°C)						75°F (24°C)						85°F (29°C)						95°F (35°C)					
			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb		
	cfm	L/s	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C
63°F (17°C)	4800	2265	93.8	27.5	4.63	.70	.82	.94	90.7	26.6	5.14	.71	.83	.95	87.1	25.5	5.70	.72	.85	.97	83.3	24.4	6.33	.73	.87	.99
	6000	2830	98.3	28.8	4.69	.74	.88	1.00	95.0	27.8	5.20	.75	.90	1.00	91.3	26.8	5.76	.76	.91	1.00	87.1	25.5	6.39	.78	.94	1.00
	7200	3400	101.7	29.8	4.75	.78	.94	1.00	98.1	28.8	5.25	.79	.95	1.00	94.2	27.6	5.80	.81	.97	1.00	90.0	26.4	6.43	.83	.99	1.00
67°F (19°C)	4800	2265	98.7	28.9	4.70	.56	.68	.79	95.4	28.0	5.21	.57	.69	.80	91.9	26.9	5.77	.57	.70	.82	88.0	25.8	6.40	.58	.71	.83
	6000	2830	103.6	30.4	4.77	.59	.72	.85	99.9	29.3	5.27	.59	.73	.86	96.0	28.1	5.83	.60	.74	.88	91.7	26.9	6.46	.61	.76	.90
	7200	3400	106.9	31.3	4.83	.61	.76	.91	103.1	30.2	5.32	.62	.77	.92	99.1	29.0	5.88	.63	.79	.94	94.5	27.7	6.51	.64	.81	.96
71°F (22°C)	4800	2265	103.4	30.3	4.77	.44	.55	.65	100.0	29.3	5.28	.44	.55	.66	96.3	28.2	5.84	.44	.56	.67	92.3	27.1	6.47	.44	.56	.69
	6000	2830	108.5	31.8	4.85	.44	.57	.70	104.8	30.7	5.35	.44	.58	.71	100.7	29.5	5.91	.45	.59	.72	96.3	28.2	6.53	.45	.60	.74
	7200	3400	112.0	32.8	4.91	.46	.60	.74	108.2	31.7	5.40	.46	.61	.75	103.8	30.4	5.96	.46	.62	.77	99.3	29.1	6.58	.47	.63	.79

COOLING CAPACITY - TSA180S4D (SECOND STAGE) with [TAA180S4D]

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																							
			85°F (29°C)						95°F (35°C)						105°F (41°C)						115°F (46°C)					
			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb		
	cfm	L/s	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C
63°F (17°C)	4800	2265	174.3	51.1	11.40	.72	.85	.97	166.7	48.9	12.66	.73	.87	.99	158.8	46.5	14.13	.75	.89	1.00	149.7	43.9	15.81	.77	.91	1.00
	6000	2830	182.6	53.5	11.51	.76	.91	1.00	174.2	51.1	12.79	.78	.94	1.00	165.4	48.5	14.23	.80	.96	1.00	156.3	45.8	15.91	.82	.98	1.00
	7200	3400	188.4	55.2	11.60	.81	.97	1.00	179.9	52.7	12.86	.83	.99	1.00	170.7	50.0	14.30	.85	1.00	1.00	162.2	47.5	16.00	.88	1.00	1.00
67°F (19°C)	4800	2265	183.8	53.9	11.53	.57	.70	.82	176.0	51.6	12.80	.58	.71	.83	167.4	49.1	14.25	.59	.72	.86	158.0	46.3	15.94	.60	.74	.88
	6000	2830	191.9	56.2	11.66	.60	.74	.88	183.5	53.8	12.92	.61	.76	.90	174.4	51.1	14.37	.62	.78	.93	164.4	48.2	16.04	.63	.80	.95
	7200	3400	198.1	58.1	11.76	.63	.79	.94	189.1	55.4	13.02	.64	.81	.96	179.4	52.6	14.45	.65	.83	.99	168.9	49.5	16.10	.67	.86	1.00
71°F (22°C)	4800	2265	192.7	56.5	11.67	.44	.56	.67	184.5	54.1	12.94	.44	.56	.69	175.7	51.5	14.38	.44	.57	.70	166.2	48.7	16.07	.45	.59	.72
	6000	2830	201.5	59.1	11.81	.45	.59	.72	192.5	56.4	13.06	.45	.60	.74	183.1	53.7	14.51	.46	.61	.75	173.0	50.7	16.17	.47	.62	.78
	7200	3400	207.6	60.8	11.92	.46	.62	.77	198.5	58.2	13.17	.47	.63	.79	188.6	55.3	14.61	.48	.64	.81	177.7	52.1	16.25	.47	.66	.84

COOLING CAPACITY - TSA180S4D (FIRST STAGE) with [(2) TAA090S4S]

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																							
			65°F (18°C)						75°F (24°C)						85°F (29°C)						95°F (35°C)					
			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb		
	cfm	L/s	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C
63°F (17°C)	4800	2265	99.4	29.1	4.71	.69	.81	.93	96.1	28.2	5.21	.71	.83	.95	92.4	27.1	5.77	.71	.84	.97	88.3	25.9	6.40	.73	.86	.99
	6000	2830	104.3	30.6	4.79	.74	.88	1.00	100.5	29.5	5.28	.75	.89	1.00	96.6	28.3	5.84	.76	.91	1.00	92.5	27.1	6.48	.78	.93	1.00
	7200	3400	108.0	31.7	4.84	.78	.94	1.00	104.3	30.6	5.34	.80	.96	1.00	100.0	29.3	5.89	.81	.97	1.00	95.4	28.0	6.52	.83	.99	1.00
67°F (19°C)	4800	2265	105.0	30.8	4.80	.56	.67	.78	101.5	29.7	5.30	.56	.68	.79	97.7	28.6	5.86	.57	.69	.81	93.5	27.4	6.49	.57	.70	.83
	6000	2830	110.2	32.3	4.88	.58	.72	.85	106.3	31.2	5.38	.59	.73	.87	102.1	29.9	5.93	.60	.74	.88	97.7	28.6	6.56	.61	.76	.90
	7200	3400	113.8	33.4	4.93	.60	.76	.91	109.6	32.1	5.42	.62	.77	.93	105.3	30.9	5.98	.63	.79	.95	100.2	29.4	6.60	.64	.80	.97
71°F (22°C)	4800	2265	110.7	32.4	4.88	.43	.54	.65	106.9	31.3	5.39	.43	.55	.66	102.9	30.2	5.94	.44	.55	.66	98.4	28.8	6.57	.44	.56	.68
	6000	2830	115.8	33.9	4.97	.44	.56	.69	111.9	32.8	5.46	.44	.57	.70	107.6	31.5	6.02	.45	.59	.72	102.8	30.1	6.64	.45	.59	.73
	7200	3400	119.4	35.0	5.03	.46	.60	.73	115.4	33.8	5.52	.46	.61	.75	110.8	32.5	6.07	.46	.62	.77	105.8	31.0	6.69	.46	.63	.77

COOLING CAPACITY - TSA180S4D (SECOND STAGE) with [(2) TAA090S4S]

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																							
			85°F (29°C)						95°F (35°C)						105°F (41°C)						115°F (46°C)					
			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb		
	cfm	L/s	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C
63°F (17°C)	4800	2265	99.4	29.1	4.71	.69	.81	.93	96.1	28.2	5.21	.71	.83	.95	92.4	27.1	5.77	.71	.84	.97	88.3	25.9	6.40	.73	.86	.99
	6000	2830	104.3	30.6	4.79	.74	.88	1.00	100.5	29.5	5.28	.75	.89	1.00	96.6	28.3	5.84	.76	.91	1.00	92.5	27.1	6.48	.78	.93	1.00
	7200	3400	108.0	31.7	4.84	.78	.94	1.00	104.3	30.6	5.34	.80	.96	1.00	100.0	29.3	5.89	.81	.97	1.00	95.4	28.0	6.52	.83	.99	1.00
67°F (19°C)	4800	2265	105.0	30.8	4.80	.56	.67	.78	101.5	29.7	5.30	.56	.68	.79	97.7	28.6	5.86	.57	.69	.81	93.5	27.4	6.49	.57	.70	.83
	6000	2830	110.2	32.3	4.88	.58	.72	.85	106.3	31.2	5.38	.59	.73	.87	102.1	29.9	5.93	.60	.74	.88	97.7	28.6	6.56	.61	.76	.90
	7200	3400	113.8	33.4	4.93	.60	.76	.91	109.6	32.1	5.42	.62	.77	.93	105.3	30.9	5.98	.63	.79	.95	100.2	29.4	6.60	.64	.80	.97
71°F (22°C)	4800	2265	110.7	32.4	4.88	.43	.54	.65	106.9	31.3	5.39	.43	.55	.66	102.9	30.2	5.94	.44	.55	.66	98.4	28.8	6.57	.44	.56	.68
	6000	2830	115.8	33.9	4.97	.44	.56	.69	111.9	32.8	5.46	.44	.57	.70	107.6	31.5	6.02	.45	.59	.72	102.8	30.1	6.64	.45	.59	.73
	7200	3400	119.4	35.0	5.03	.46	.60	.73	115.4	33.8	5.52	.46	.61	.75	110.8	32.5	6.07	.46	.62	.77	105.8	31.0	6.69	.46	.63	.77

NOTES: For Temperatures and Capacities not shown in tables, see bulletin - Cooling Unit Rating Table Correction Factor Data in Miscellaneous Engineering Data section.

AIR HANDLERS

COOLING CAPACITY - TSA240S4D (FIRST STAGE) with [TAA240S4D]

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																			
			65°F (18°C)						75°F (24°C)						85°F (29°C)						95°F (35°C)					
			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb		
	cfm	L/s	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C
63°F (17°C)	6400	3020	124.8	36.6	5.92	.72	.84	.95	120.3	35.3	6.61	.73	.85	.97	115.7	33.9	7.37	.74	.87	.98	110.8	32.5	8.25	.75	.89	1.00
	8000	3775	130.7	38.3	6.02	.76	.90	1.00	125.9	36.9	6.70	.77	.92	1.00	121.0	35.5	7.46	.79	.93	1.00	115.6	33.9	8.33	.80	.96	1.00
	9600	4530	135.1	39.6	6.09	.81	.96	1.00	129.9	38.1	6.75	.82	.97	1.00	124.9	36.6	7.52	.84	.99	1.00	119.4	35.0	8.39	.86	1.00	1.00
67°F (19°C)	6400	3020	132.3	38.8	6.03	.57	.70	.81	127.4	37.3	6.72	.58	.70	.82	122.6	35.9	7.48	.59	.72	.84	117.3	34.4	8.36	.59	.73	.85
	8000	3775	138.2	40.5	6.14	.60	.74	.87	133.1	39.0	6.81	.61	.75	.88	128.1	37.5	7.58	.61	.77	.90	122.4	35.9	8.44	.62	.79	.93
	9600	4530	142.9	41.9	6.22	.63	.79	.93	137.6	40.3	6.89	.63	.80	.95	132.0	38.7	7.64	.65	.82	.96	125.9	36.9	8.50	.66	.84	.98
71°F (22°C)	6400	3020	139.3	40.8	6.16	.44	.56	.67	134.2	39.3	6.83	.45	.56	.68	129.0	37.8	7.59	.45	.57	.69	123.4	36.2	8.46	.45	.58	.70
	8000	3775	145.4	42.6	6.26	.45	.58	.72	140.2	41.1	6.93	.46	.59	.73	134.7	39.5	7.69	.46	.60	.74	129.0	37.8	8.56	.46	.62	.76
	9600	4530	150.2	44.0	6.34	.46	.61	.76	144.5	42.3	7.01	.46	.62	.78	138.6	40.6	7.75	.46	.63	.80	132.4	38.8	8.62	.47	.65	.81

COOLING CAPACITY - TSA240S4D (SECOND STAGE) with [TAA240S4D]

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																			
			85°F (29°C)						95°F (35°C)						105°F (41°C)						115°F (46°C)					
			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb		
	cfm	L/s	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C
63°F (17°C)	6400	3020	231.4	67.8	14.74	.74	.87	.98	221.6	64.9	16.50	.75	.89	1.00	210.8	61.8	18.52	.77	.91	1.00	199.1	58.4	20.85	.79	.93	1.00
	8000	3775	242.0	70.9	14.91	.79	.93	1.00	231.2	67.8	16.66	.80	.96	1.00	219.2	64.2	18.66	.83	.98	1.00	207.4	60.8	20.98	.85	1.00	1.00
	9600	4530	249.8	73.2	15.05	.84	.99	1.00	238.9	70.0	16.79	.86	1.00	1.00	227.5	66.7	18.81	.88	1.00	1.00	215.8	63.2	21.09	.90	1.00	1.00
67°F (19°C)	6400	3020	245.2	71.9	14.95	.59	.72	.84	234.6	68.8	16.71	.59	.73	.85	223.2	65.4	18.72	.60	.74	.87	211.1	61.9	21.04	.62	.76	.90
	8000	3775	256.1	75.1	15.16	.61	.77	.90	244.8	71.7	16.87	.62	.79	.93	232.1	68.0	18.86	.64	.80	.95	219.1	64.2	21.14	.65	.83	.98
	9600	4530	263.9	77.3	15.29	.65	.82	.96	251.7	73.8	16.99	.66	.84	.98	238.8	70.0	18.97	.67	.86	1.00	224.0	65.6	21.22	.69	.88	1.00
71°F (22°C)	6400	3020	257.9	75.6	15.18	.45	.57	.69	246.9	72.4	16.92	.45	.58	.70	235.2	68.9	18.91	.45	.59	.72	222.3	65.1	21.22	.46	.60	.74
	8000	3775	269.4	79.0	15.38	.46	.60	.74	258.0	75.6	17.12	.46	.62	.76	244.8	71.7	19.10	.46	.63	.78	231.0	67.7	21.37	.47	.65	.80
	9600	4530	277.1	81.2	15.51	.46	.63	.80	264.8	77.6	17.23	.47	.65	.81	251.1	73.6	19.20	.47	.66	.84	236.8	69.4	21.47	.48	.68	.86

COOLING CAPACITY - TSA240S4D (FIRST STAGE) with [(2) TAA120S4D]

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																			
			65°F (18°C)						75°F (24°C)						85°F (29°C)						95°F (35°C)					
			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb		
	cfm	L/s	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C
63°F (17°C)	6400	3020	127.0	37.2	5.95	.72	.84	.96	122.5	35.9	6.64	.73	.86	.97	117.7	34.5	7.42	.74	.87	.99	112.5	33.0	8.29	.76	.89	1.00
	8000	3775	133.4	39.1	6.06	.77	.90	1.00	128.4	37.6	6.73	.78	.92	1.00	123.4	36.2	7.50	.79	.94	1.00	117.9	34.6	8.37	.81	.96	1.00
	9600	4530	138.4	40.6	6.14	.81	.96	1.00	133.1	39.0	6.81	.83	.98	1.00	127.6	37.4	7.57	.84	.99	1.00	121.7	35.7	8.43	.86	1.00	1.00
67°F (19°C)	6400	3020	134.6	39.4	6.08	.58	.69	.81	129.8	38.0	6.76	.58	.71	.82	124.6	36.5	7.52	.59	.71	.84	119.4	35.0	8.38	.59	.73	.86
	8000	3775	141.3	41.4	6.19	.60	.75	.87	135.9	39.8	6.86	.61	.76	.89	130.2	38.2	7.61	.61	.77	.91	124.5	36.5	8.47	.63	.79	.93
	9600	4530	145.8	42.7	6.26	.63	.79	.93	140.2	41.1	6.93	.64	.81	.95	134.1	39.3	7.68	.65	.82	.97	128.0	37.5	8.53	.66	.84	.99
71°F (22°C)	6400	3020	142.7	41.8	6.22	.44	.56	.67	137.4	40.3	6.89	.44	.57	.68	131.9	38.7	7.64	.44	.57	.69	126.2	37.0	8.51	.45	.58	.71
	8000	3775	148.7	43.6	6.31	.45	.58	.72	143.6	42.1	7.00	.46	.60	.73	137.5	40.3	7.74	.46	.61	.74	131.2	38.5	8.60	.46	.61	.76
	9600	4530	153.4	45.0	6.40	.46	.61	.76	147.6	43.3	7.07	.46	.63	.78	141.5	41.5	7.81	.47	.64	.80	134.9	39.5	8.66	.47	.65	.82

COOLING CAPACITY - TSA240S4D (SECOND STAGE) with [(2) TAA120S4D]

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																			
			85°F (29°C)						95°F (35°C)						105°F (41°C)						115°F (46°C)					
			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb		
	cfm	L/s	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C
63°F (17°C)	6400	3020	235.4	69.0	14.83	.74	.87	.99	225.0	65.9	16.58	.76	.89	1.00	214.1	62.7	18.55	.77	.91	1.00	202.4	59.3	20.87	.79	.94	1.00
	8000	3775	246.8	72.3	15.00	.79	.94	1.00	235.8	69.1	16.73	.81	.96	1.00	224.1	65.7	18.76	.83	.98	1.00	210.9	61.8	21.01	.85	1.00	1.00
	9600	4530	255.3	74.8	15.14	.84	.99	1.00	243.5	71.4	16.86	.86	1.00	1.00	233.4	68.4	18.89	.88	1.00	1.00	220.9	64.7	21.21	.91	1.00	1.00
67°F (19°C)	6400	3020	249.1	73.0	15.04	.59	.71	.84	238.9	70.0	16.77	.59	.73	.86	227.4	66.6	18.80	.61	.75	.88	214.2	62.8	21.06	.62	.77	.90
	8000	3775	260.4	76.3	15.21	.61	.77	.91	249.0	73.0	16.95	.63	.79	.93	236.1	69.2	18.92	.64	.81	.95	221.7	65.0	21.17	.65	.83	.98
	9600	4530	268.2	78.6	15.35	.65	.82	.97	256.1	75.1	17.06	.66	.84	.99	243.2	71.3	19.05	.67	.86	1.00	228.2	66.9	21.28	.69	.89	1.00
71°F (22°C)	6400	3020	263.8	77.3	15.28	.44	.57	.69	252.4	74.0	17.01	.45	.58	.71	240.3	70.4	18.99	.46	.59	.72	226.7	66.4	21.28	.46	.60	.74
	8000	3775	275.0	80.6	15.48	.46	.61	.74	262.4	76.9	17.20	.46	.61	.76	249.6	73.2	19.16	.47	.63	.79	235.0	68.9	21.44	.47	.65	.81
	9600	4530	283.0	82.9	15.62	.47	.64	.80	269.7	79.0	17.32	.47	.65	.82	255.7	74.9	19.31	.49	.67	.84	240.2	70.4	21.55	.48	.68	.87

This Specification is for Lennox Industries T-Class™, 6 to 20 Ton, outdoor air conditioner split system (TS series) units. Revise specification section number and title below to suit project requirements, specification practices and section content. Refer to CSI *MasterFormat* for other section numbers and titles.

Optional text or text requiring a decision is indicated by **bold brackets [ ]**; delete text not required in final copy of specification. Specifier Notes typically precede specification text; delete notes in final copy of specification. Trade/brand names with appropriate symbols typically are used in Specifier Notes; symbols are not used in specification text. Metric conversion, where used, is soft metric conversion.

SECTION 23 63 00

REFRIGERANT CONDENSERS

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes: Split System Condensing Units.

Specifier Note: Revise paragraph below to suit project requirements. Add section numbers and titles per CSI *MasterFormat* and specifier's practice.

B. Related Sections

Specifier Note: Article below may be omitted when specifying manufacturer's proprietary products and recommended installation. Retain Reference Article when specifying products and installation by an industry reference standard. If retained, list standard(s) referenced in this section. Indicate issuing authority name, acronym, standard designation and title. Establish policy for indicating edition date of standard referenced. Conditions of the Contract or Division 1 References Section may establish the edition date of standards. This article does not require compliance with standard, but is merely a listing of references used. Article below should list only those industry standards referenced in this section. Retain only those reference standards to be used within the text of this Section. Add and delete as required for specific project.

1.02 REFERENCES

A. Air-Conditioning and Refrigeration Institute (ARI):
   1. ARI 270-95 Sound Rating of Outdoor Unitary Equipment.
   2. ARI 340/360 Commercial and Industrial Unitary Air-Conditioning and Heat Pump Equipment (ANSI approved)

B. Servicing Standards:
   1. National Electric Code (NEC).
   2. Underwriters Laboratories (UL).
   3. Canadian Electric Code (CEC).

C. Units to be Department of Energy (DOE) rated

D. ISO 9001, units manufactured to quality standard

E. Meet Minimum EPACT 2005, and addendums, efficiency levels

Specifier Note: Article below should be restricted to statements describing design or performance requirements and functional (not dimensional) tolerances of a complete system. Limit descriptions to composite and operational properties required to link components of a system together and to interface with other systems.

1.03 SYSTEM DESCRIPTION

A. Performance Requirements:
   1. Condensing Unit: [6, 7.5, 10, 12.5, 15 and 20 ton capacity].
   2. Electrical Characteristics:
      a. 60 Hz.
      b. 3 phase.
      c. Voltage: **[208/230 V] [460 V] [575 V]**.

Specifier Note: Article below includes submittal of relevant data to be furnished by Contractor before, during or after construction. Coordinate this article with Architect's and Contractor's duties and responsibilities in Conditions of the Contract and Division 1 Submittal Procedures Section.

1.04 SUBMITTALS

A. General: Submit listed submittals in accordance with Conditions of the Contract and Division 1 Submittal Procedures.

B. Product Data: Submit product data for specified products.
C. Shop Drawings:
    1. Submit shop drawings in accordance with Section [01330 - Submittal Procedures].
    2. Indicate:
        a. Equipment, piping and connections, together with valves, strainers, control assemblies, thermostatic controls, auxiliaries and hardware and recommended ancillaries which are mounted, wired and piped ready for final connection to building system, its size and recommended bypass connections.
        b. Piping, valves and fittings shipped loose showing final location in assembly.
        c. Control equipment shipped loose, showing final location in assembly.
        d. Field wiring diagrams.
        e. Dimensions, internal and external construction details, installation clearances, recommended method of installation, sizes and location of mounting bolt holes.
        f. Detailed composite wiring diagrams for control systems showing factory installed wiring and equipment on packaged equipment or required for controlling devices or ancillaries, accessories, controllers.
D. Quality Assurance:
    1. All units to be factory tested before shipping.
    2. Manufacturer's Instructions: Manufacturer's installation instructions.

Specifier Note: Coordinate paragraph below with Part 3 Field Quality Requirements Article herein. Retain or delete as applicable.

E. Closeout Submittals: Submit the following:
    1. Warranty: Warranty documents specified herein.
    2. Operation and Maintenance Data: Operation and maintenance data for installed products in accordance with Division 1 Closeout Submittals (Maintenance Data and Operation Data) Section. Include methods for maintaining installed products and precautions against cleaning materials and methods detrimental to finishes and performance. Include names and addresses of spare part suppliers.
    3. Provide brief description of unit, with details of function, operation, control and component service.
    4. Commissioning Report: Submit commissioning reports, report forms and schematics in accordance with Section 01810 - Commissioning.

1.05 QUALITY ASSURANCE

A. Qualifications:
    1. Installer experienced in performing work of this section who has specialized in installation of work similar to that required for this project.
    2. Manufacturer Qualifications: Manufacturer capable of providing field service representation during construction and approving application method.
B. Preinstallation Meetings: Conduct pre-installation meeting to verify project requirements, manufacturer's installation instructions and manufacturer's warranty requirements. Comply with Division 1 Project Management and Coordination (Project Meetings).

1.06 DELIVERY, STORAGE & HANDLING

A. General: Comply with Division 1 Product Requirements.
B. Ordering: Comply with manufacturer's ordering instructions and lead time requirements to avoid construction delays.
C. Packing, Shipping, Handling and Delivery:
    1. Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.
    2. Ship, handle and unload units according to manufacturer's instructions.
D. Storage and Protection:
    1. Store materials protected from exposure to harmful weather conditions.
    2. Factory shipping covers to remain in place until installation.

Specifier Note: Coordinate article below with Conditions of the Contract and with Division 1 Closeout Submittals (Warranty).

1.07 WARRANTY

A. Project Warranty: Refer to Conditions of the Contract for project warranty provisions.
B. Manufacturer's Warranty: Submit, for Owner's acceptance, manufacturer's standard warranty document executed by authorized company official. Manufacturer's warranty is in addition to, and not a limitation of, other rights Owner may have under Contract Documents.

Specifier Note: Coordinate paragraph below with manufacturer's warranty requirements.

C. Warranty: Commencing on Date of Installation.
   1. Compressor: 5 year limited (nonresidential applications).
   2. Other Covered Components: 1 year limited (nonresidential applications).

PART 2 PRODUCTS

Specifier Note: Retain article below for proprietary method specification. Add product attributes, performance characteristics, material standards and descriptions as applicable. Use of such phrases as "or equal" or "or approved equal" or similar phrases may cause ambiguity in specifications. Such phrases require verification (procedural, legal and regulatory) and assignment of responsibility for determining "or equal" products.

2.01 OUTDOOR CONDENSING UNITS

A. Manufacturer: Lennox Industries.
   1. Contact: 2100 Lake Park Blvd., Richardson, TX 75080; Telephone: (800) 453-6669; Web site: www.lennox.com.

B. Proprietary Products/Systems: TS Series, including the following equipment:
   1. Cabinet:
      a. Galvanized steel
      b. Pre-painted finish
      c. Refrigerant line connections to be located outside the unit
      d. Control access.
      e. All controls factory wired
   2. Compressor:
      a. Scroll Type
      b. Resiliently mounted on rubber mounts for vibration isolation
      c. Overload protected
      d. Internal excessive current and temperature protection.
      e. Crankcase heater
      f. 1 or 2 single speed compressor(s) per unit.
   3. Refrigerant System
      a. General
         1. Refrigerant: R410-A
         2. Fully serviceable liquid and suction line service valves.
         3. Gauge ports.
      b. Refrigerant System (large):
         1. High pressure switch
         2. Loss of charge (low pressure) switch
         3. Hi-capacity driers
   4. Outdoor Coil(s):
      a. Aluminum rippled and lanced fins.
      b. Copper tube construction.
      c. Aluminum fins to be mechanically bonded to copper tubes.
      d. All coils to be high pressure leak tested at factory.
   5. Outdoor Coil Fans/Air Mover:
      a. Direct drive, propeller type fan(s).
      b. Totally enclosed fan motors.
      c. Steel fan guards or fan guard.
      d. Fan service by removal of fan guard.
   6. Controls: Low Ambient Operation, down to 30 °F
   7. [Field Installed Options/Accessories]:
      a. Outdoor Coils:
         1. [Hail Guards: heavy duty metal mesh enclosures]
         2. [Coil Guards: heavy duty metal mesh]
      b. Controls
         1. [L-Connection® Network]
         2. [Low Ambient Control, down to 0 °F]
         3. [Thermostat]

2.02 PRODUCT SUBSTITUTIONS

A. Substitutions: No substitutions permitted.

PART 3 EXECUTION

3.01 MANUFACTURER'S INSTRUCTIONS

Specifier Note: Revise article below to suit project requirements and specifier's practice.

A. Compliance: Comply with manufacturer's written data, including product technical bulletins, product catalog installation instructions and product carton installation instructions.

3.02 EXAMINATION

A. Site Verification of Conditions: Verify substrate conditions, which have been previously installed under other sections, are acceptable for product installation in accordance with manufacturer's instructions.

3.03 INSTALLATION

A. Install Condensing Units in accordance with manufacturers instructions and regulations of authorities having jurisdiction.

END OF SECTION

REVISIONS

Sections	Description of Change
Document	Added Specifications, ratings and dimensions for TSA180 and TSA240 models.

LENNOX®

Visit us at www.lennox.com
For the latest technical information,
www.lennoxcommercial.com
Contact us at 1-800-4-LENNOX

NOTE - Due to Lennox' ongoing committment to quality, Specifications, Ratings and Dimensions subject to change without notice and without incurring liability.
Improper installation, adjustment, alteration, service or maintenance can cause property damage or personal injury.
Installation and service must be performed by a qualified installer and servicing agency.