



The world's largest privately owned HVAC distributor

1.5 TO 5 TONS YORK COOLING ONLY CONDENSING UNITS

CZE 18 SEER R-410a Single Phase

have the following available benefits and options

Please specify the following:

Micro Channel Condenser Coil
High/Low Pressure switch, Internal Protections
Factory Installed Filter Drier
Isolated Compressor Compartment
Low Sound Operation with Low RPM Fans
5 Years Parts Warranty
10 Years Compressor Warranty
Choice of colors to match building
T2950 365 Days Thermostat
BAS Networkable with free Web Software
ArmorGuard Stainless Steel 316 Corrosion Protection on coils

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Heating and Air Conditioning

TECHNICAL GUIDE

AFFINITY
R-410A SPLIT-SYSTEM AIR CONDITIONERS
UP TO 18 SEER

MODELS:

CZE024 THRU 060
(2 THRU 5 NOMINAL TONS)



Due to continuous product improvement, specifications are subject to change without notice.

Visit us on the web at www.york.com for the most up-to-date technical information.

Additional rating information can be found at www.ariprimeret.org.

DESCRIPTION

The CZE Series condensing unit is the outdoor part of a versatile air conditioning system. It is designed to be custom matched with one of our complete line of evaporator sections, each designed to serve a specific function.

WARRANTY

5-year limited parts warranty.
10-year limited compressor warranty.
Premium System Warranty - Limited lifetime compressor and 10-year parts when matched with an approved York Affinity furnace and coil or UPG air handler.

FEATURES

- Superior Coil Protection - A stamped decorative metal coil guard completely protects coil from debris and other large damaging material while a polymer mesh further protects the coil against smaller particles.
Color Grilles - Engineered around the needs and wants of the consumer, Affinity units are now available with a choice of color options designed to compliment any home.
Isolated Compressor Compartment - A molded composite bulkhead isolates the compressor from the rest of the unit reducing sound and vibration.
Protected Compressors - Each compressor is protected against abnormal pressures by an internal pressure relief valve and factory installed high and low pressure controls.
Environmentally Friendly Refrigerant - Next generation refrigerant R-410A delivers environmentally friendly performance with zero ozone depletion.
Durable Finish - Automotive quality finish provides the ultimate protection from harmful U.V. rays and rust ensuring long-lasting high quality appearance.
Lower Installed Cost - Designed to provide enhanced installability by featuring a slide-down control compartment and angled service valves to reduce overall installation time and cost.
Low Operating Sound Levels - A fan design boasting technology adapted from aeronautic and defense engineering provides for whisper quiet operation by allowing airflow to flow smoothly and efficiently across the fan tips.
Filter-Drier - A factory installed, solid core liquid line filter-drier filters harmful debris and moisture from the system.
Easy Service Access - A full end, full service, access panel with handle makes for easy entry to internal components.
Composite Base - Strong and durable composite base pan resists rust and corrosion while it helps reduce vibrations and noise.
Quiet drive system - The swept-wing fan, composite base pan, isolated compressor compartment, electronically controlled fan motor and two-stage compressor are engineered as a system to reduce overall sound to a mere whisper.
Low RPM fan motor - Helps to reduce airflow noise.

Certified in accordance with the Unitary Small Equipment certification program, which is based on ARI Standard 210/240.

Physical and Electrical Data

MODEL		CZE02411	CZE03611	CZE03811	CZE04811	CZE06011
Unit Supply Voltage		208-230V, 1 ϕ , 60Hz				
Normal Voltage Range ¹		187 to 252				
Minimum Circuit Ampacity		13.3	22.3	23.6	27.9	33.5
Max. Overcurrent Device Amps ²		20	35	40	45	50
Min. Overcurrent Device Amps ³		15	25	25	30	35
Compressor Type		Scroll	Scroll	Scroll	Scroll	Scroll
Compressor Amps	Rated Load	10.3	16.7	16.7	21.2	25.6
	Locked Rotor	52	82	82	96	118
Crankcase Heater		No	No	No	No	No
Fan Motor Amps	Rated Load	0.5	1.5	2.8	1.5	1.5
Fan Diameter Inches		22	22	22	22	22
Fan Motor	Rated HP	1/15	1/4	1/3	1/4	1/4
	Nominal RPM	850	850	685	850	850
	Nominal CFM	2,000	3,450	2500	3,250	3,150
Coil	Face Area Sq. Ft.	17.15	20.58	20.58	20.58	20.58
	Rows Deep	1	1	2	2	2
	Fins / Inch	22	22	22	22	22
Liquid Line Set OD (Field Installed)		3/8	3/8	3/8	3/8	3/8
Vapor Line Set OD (Field Installed)		3/4	3/4	7/8	7/8	1-1/8
Unit Charge (Lbs. - Oz.) ⁴		7 - 5	8 - 4	11 - 4	14 - 2	13 - 9
Charge Per Foot, Oz.		0.62	0.62	0.67	0.67	0.75
Operating Weight Lbs.		195	210	260	260	270

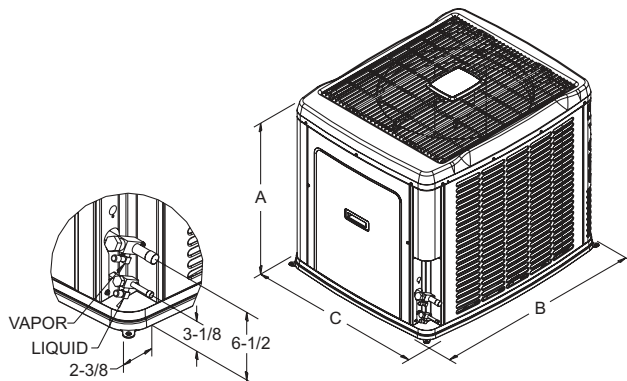
1 Rated in accordance with ARI Standard 110, utilization range "A".

2 Dual element fuses or HACR circuit breaker. Maximum allowable overcurrent protection.

3 Dual element fuses or HACR circuit breaker. Minimum recommended overcurrent protection.

4 The Unit Charge is correct for the outdoor unit, matched indoor coil and 15 feet of refrigerant tubing. For tubing lengths other than 15 feet, add or subtract the amount of refrigerant, using the difference in length multiplied by the per foot value.

All dimensions are in inches. They are subject to change without notice. Certified dimensions will be provided upon request.



Unit Model	Dimensions (Inches)			Refrigerant Connection Service Valve Size	
	A	B	C	Liquid	Vapor
024	33-1/2	37	31	3/8"	3/4"
036	39-1/2	37	31		7/8"
038	39-1/2	37	31		7/8" *
048	39-1/2	37	31		
060	39-1/2	37	31		

* Expander fitting required for 1-1/8" line set.

COOLING CAPACITY - With Air Handler Coils

UNIT MODEL	AIR HANDLER			COIL MODEL ¹	COOLING					
	MODEL	ELECTRIC HEAT KW ²	W		STAGE	RATED CFM	NET MBH		SEER	EER
							TOTAL	SENS.		
1 & 3 PH 13 SEER AC WITH MA										
CZE02411	AV24	2,5,8,10,15	17	-	1	625	18.5	14.9	15.00	13.20
					2	800	24.0	19.0		12.00
	MV12B	5,8,10	17	FC/MC36B	1	650	18.5	14.9	15.00	13.20
					2	825	24.0	19.0		12.00
CZE03611	AV/SV48	5,8,10,15,18,20,25	24	-	1	810	23.8	17.5	15.25	12.40
					2	1200	36.0	26.3		12.00
	MV12B	5,8,10	17	FC/MC42B	1	775	23.8	17.5	15.25	12.40
					2	1200	35.0	26.3		12.00
	MV16C	5,8,10,15,18,20	21	FC/MC48C	1	775	25.4	18.7	15.50	13.20
					2	1185	36.0	27.2		12.00
	MV20D	10,15,20,25	24	FC/MC48D	1	775	25.4	18.8	15.75	13.25
					2	1185	36.0	27.2		12.00
CZE03811	AV/SV48	5,8,10,15,18,20,25	24	-	1	810	24.4	17.6	16.75	14.55
					2	1200	35.6	25.6		12.50
	F*FV060	5,8,10,15,20,25	24	-	1	770	24.4	17.6	17.50	14.55
					2	1200	34.8	25.6		12.50
	MV16C	5,8,10,15,18,20	17	FC/MC42C	1	775	24.6	17.7	17.50	14.35
					2	1200	34.6	25.5		12.50
	MV16C	5,8,10,15,18,20	21	FC/MC48C	1	770	24.6	17.7	17.50	14.50
					2	1200	34.8	25.6		12.50
	MV12D	10,15,20,25	24	FC/MC48D	1	770	24.6	17.7	17.75	14.50
					2	1200	35.2	25.9		12.50
	MV20D	10,15,20,25	24	FC/MC48D	1	770	24.4	17.6	17.50	14.50
					2	1200	34.8	25.6		12.50
	MV12D	10,15,20,25	24	FC/MC60D	1	775	24.6	17.7	17.75	14.65
					2	1200	35.0	25.9		12.50
	MV20D	10,15,20,25	24	FC/MC60D	1	775	24.4	17.6	17.50	14.55
					2	1200	34.8	25.6		12.50
MV12D	10,15,20,25	24	MC61D	1	770	24.8	17.9	18.00	14.65	
				2	1200	35.2	26.1		12.50	
MV20D	10,15,20,25	24	MC61D	1	770	24.6	17.7	17.75	14.55	
				2	1200	35.0	25.8		12.50	
CZE04811	AV/SV48	5,8,10,15,18,20,25	24	-	1	1130	33.4	25.1	15.00	13.20
					2	1600	47.0	36.6		12.00
	F*FV060	5,8,10,15,20,25	24	-	1	1000	33.4	25.1	15.75	13.20
					2	1600	47.0	36.6		12.00
	MV20D	10,15,20,25	24	FC/MC60D	1	1000	33.4	25.1	15.50	13.15
					2	1600	47.0	36.6		12.00
	MV20D	10,15,20,25	24	MC61D	1	1000	33.6	25.3	16.00	13.30
					2	1560	47.0	37.1		12.00
CZE06011	AV/SV60	5,8,10,15,18,20,25	24	-	1	1145	39.0	29.5	13.75	11.60
					2	1845	54.0	42.4		11.00
	F*FV060	5,8,10,15,20,25	24	-	1	1200	39.0	29.5	13.75	11.60
					2	1845	55.0	42.4		11.00
	MV20D	10,15,20,25	24	FC/MC60D	1	1200	39.0	29.5	13.50	11.70
					2	1845	54.5	42.4		11.00
	MV20D	10,15,20,25	24	MC61D	1	1180	39.5	29.7	14.00	11.90
					2	1850	55.0	42.7		11.50

Rated in accordance with DOE test procedures (Federal Register 12-27-79 and 3-18-88) and ARI Standards 210.
 Cooling MBH based on 80°F entering air temperature, 50% RH, and rated air flow.
 EER (Energy Efficiency Ratio) is the total cooling output in BTU's at 95°F outdoor ambient divided by the total electric power in watt-hours at those conditions.
 SEER (Seasonal Energy Efficiency Ratio) is the total cooling output in BTU's during a normal annual usage period for cooling divided by the total electric power input in watt-hours during the same period.

- 1 MC coils available with a factory installed horizontal drain pan. See price pages for specific model number.
- 2 Single phase units require single phase 4HK heaters.

COOLING CAPACITY - With Variable Speed Furnaces

UNIT MODEL	VARIABLE SPEED FURNACE MODEL	COIL MODEL ¹	W	COOLING					
				STAGE	RATED CFM	NET MBH		SEER	EER
						TOTAL	SENSIBLE		
CZE02411	PV8*A12	FC/MC/PC30A	14	1	580	18.2	14.2	15.00	13.15
				2	875	23.8	19.7		12.00
	PV9*A12	FC/MC/PC30A	14	1	625	18.4	14.8	14.75	13.05
				2	800	23.6	18.9		11.50
	P(C,V)9*B12	FC/MC/PC30B	17	1	625	18.4	14.8	14.75	13.05
				2	800	23.6	18.9		11.50
	PV8*A12	FC/MC/PC36A	14	1	560	18.2	14.6	15.00	13.15
				2	800	23.8	19.0		12.00
	PV9*A12	FC/MC/PC36A	14	1	560	18.2	14.6	15.00	13.15
				2	800	23.8	19.0		12.00
	P(C,V)9*B12	FC/MC/PC36B	17	1	560	18.2	14.6	15.00	13.15
				2	800	23.8	19.0		12.00
	P(C,V)9*B12	HD36	-	1	560	18.2	14.6	15.00	13.15
				2	800	23.8	19.0		12.00
CZE03611	PV8*B16	FC/MC/PC42B	17	1	795	24.0	18.0	15.00	12.55
				2	1200	35.4	27.2		12.00
	P(C,V)9*B12	FC/MC/PC42B	17	1	770	23.8	17.6	15.00	12.30
				2	1200	35.2	23.9		12.00
	PV8*C16	FC/MC/PC42C	21	1	795	24.0	18.0	15.50	12.55
				2	1200	35.4	27.2		12.00
	PV8*C20	FC/MC/PC42C	21	1	795	24.0	18.0	15.50	12.55
				2	1200	35.4	27.2		12.00
	P(C,V)9*C16	FC/MC/PC42C	21	1	770	23.8	17.6	15.00	12.30
				2	1200	35.2	23.9		12.00
	P(C,V)9*C20	FC/MC/PC42C	21	1	770	23.8	17.6	15.50	12.30
				2	1200	35.4	23.9		12.00
	PV8*C16	FC/MC/PC48C	21	1	780	25.4	19.0	15.50	13.30
				2	1200	35.4	27.6		12.00
	PV8*C20	FC/MC/PC48C	21	1	780	25.4	19.0	15.75	13.30
				2	1170	36.0	27.6		12.00
	P(C,V)9*C16	FC/MC/PC48C	21	1	780	25.4	18.8	15.50	13.10
				2	1200	36.0	25.5		12.00
	P(C,V)9*C20	FC/MC/PC48C	21	1	800	25.6	18.9	15.50	13.25
				2	1200	36.0	25.6		12.00
	P(C,V)9*D20	FC/MC/PC48D	24	1	770	25.4	18.8	15.50	13.20
				2	1200	36.0	25.5		12.00
	PV8*C20	HC42	21	1	795	24.0	18.0	15.00	12.55
				2	1200	35.2	27.2		12.00
P(C,V)9*C20	HC42	21	1	795	24.0	18.0	15.00	12.55	
			2	1200	35.2	27.2		12.00	
PV8*C20	HD48	-	1	795	24.0	18.0	15.00	12.55	
			2	1200	35.2	27.2		12.00	
P(C,V)9*C20	HD48	-	1	795	24.0	18.0	15.00	12.55	
			2	1200	35.2	27.2		12.00	

For notes see Page 8.

COOLING CAPACITY - With Variable Speed Furnaces (Continued)

UNIT MODEL	VARIABLE SPEED FURNACE MODEL	COIL MODEL ¹	W	COOLING					
				STAGE	RATED CFM	NET MBH		SEER	EER
						TOTAL	SENSIBLE		
CZE03811	PV8*B16	FC/MC/PC42B	17	1	640	23.8	17.2	17.25	14.05
				2	1200	34.8	25.9		12.50
	PV8*C16	FC/MC/PC42C	21	1	640	24.2	17.4	17.25	14.30
				2	1200	34.8	26.0		12.50
	PV8*C20	FC/MC/PC42C	21	1	640	24.2	17.4	17.25	14.30
				2	1200	35.0	26.0		12.50
	P(C,V)9*C16	FC/MC/PC42C	21	1	780	25.0	18.0	17.00	14.30
				2	1200	34.8	25.9		12.50
	P(C,V)9*C20	FC/MC/PC42C	21	1	800	24.6	17.7	17.00	14.15
				2	1200	35.0	25.9		12.50
	PV8*C16	FC/MC/PC48C	21	1	640	24.2	17.4	17.25	14.30
				2	1200	34.8	26.0		12.50
	PV8*C20	FC/MC/PC48C	21	1	640	24.2	17.4	17.50	14.30
				2	1200	35.0	26.0		12.50
	P(C,V)9*C16	FC/MC/PC48C	21	1	780	25.0	18.0	17.25	14.30
				2	1200	34.8	25.9		12.50
	P(C,V)9*C20	FC/MC/PC48C	21	1	800	24.6	17.7	17.25	14.15
				2	1200	35.0	25.9		12.50
	P(C,V)9*D20	FC/MC/PC48D	24	1	770	24.4	17.6	17.25	14.15
				2	1200	35.0	25.9		12.50
	PV8*C16	FC/PC60C	21	1	640	24.0	17.3	17.25	14.20
				2	1200	34.4	25.8		12.50
	PV8*C20	FC/PC60C	21	1	640	24.0	17.3	17.50	14.20
				2	1200	34.8	25.8		12.50
	P(C,V)9*C16	FC/PC60C	21	1	780	24.6	17.7	17.00	14.05
				2	1200	34.4	25.9		12.50
	P(C,V)9*C20	FC/PC60C	21	1	800	25.0	18.0	17.25	14.35
				2	1200	35.0	25.9		12.50
	P(C,V)9*D20	FC/MC/PC60D	24	1	770	24.8	17.9	17.50	14.30
				2	1200	35.0	25.9		12.50
PV8*C16	HC42	21	1	640	24.2	17.4	17.00	14.30	
			2	1200	34.8	26.0		12.50	
PV8*C20	HC42	21	1	640	24.2	17.4	17.00	14.30	
			2	1200	35.0	26.0		12.50	
P(C,V)9*C16	HC42	21	1	780	25.0	18.0	17.00	14.30	
			2	1200	34.8	25.9		12.50	
P(C,V)9*C20	HC42	21	1	800	24.6	17.7	17.00	14.15	
			2	1200	35.0	25.9		12.50	
P(C,V)9*D20	HC60	24	1	770	24.8	17.9	17.50	14.30	
			2	1200	35.0	25.9		12.50	
PV8*C16	HD48	-	1	640	24.2	17.4	17.00	14.30	
			2	1200	34.8	26.0		12.50	
PV8*C20	HD48	-	1	640	24.2	17.4	17.00	14.30	
			2	1200	35.0	26.0		12.50	
P(C,V)9*C16	HD48	-	1	780	25.0	18.0	17.00	14.30	
			2	1200	34.8	25.9		12.50	
P(C,V)9*C20	HD48	-	1	800	24.6	17.7	17.00	14.15	
			2	1200	35.0	25.9		12.50	
P(C,V)9*D20	HD60	-	1	770	24.8	17.9	17.25	14.30	
			2	1200	35.0	25.9		12.50	
P(C,V)9*D20	MC61D	24	1	770	24.8	17.9	17.50	14.25	
			2	1200	35.2	26.1		12.50	

For notes see Page 8.

COOLING CAPACITY - With Variable Speed Furnaces (Continued)

UNIT MODEL	VARIABLE SPEED FURNACE MODEL	COIL MODEL ¹	W	COOLING					
				STAGE	RATED CFM	NET MBH		SEER	EER
						TOTAL	SENSIBLE		
CZE04811	PV8*C20	FC/PC60C	21	1	1030	33.6	25.8	15.50	13.10
				2	1610	47.0	37.6		12.00
	P(C,V)9*C20	FC/PC60C	21	1	1010	33.4	25.1	15.00	12.80
				2	1610	47.0	33.5		12.00
	PV8*C20	FC/MC/PC60D	24	1	1030	33.6	25.8	15.50	13.10
				2	1610	47.0	37.6		12.00
	P(C,V)9*D20	FC/MC/PC60D	24	1	1020	33.4	25.2	15.25	12.90
				2	1600	44.0	33.6		12.00
	PV8*C20	HC60	24	1	1030	33.6	25.8	15.50	13.10
				2	1610	47.0	37.6		12.00
	P(C,V)9*D20	HC60	24	1	1020	33.4	25.2	15.25	12.90
				2	1600	44.0	33.6		12.00
	PV8*C20	HD60	-	1	1030	33.6	25.8	15.50	13.10
				2	1610	47.0	37.6		12.00
	P(C,V)9*D20	HD60	-	1	1020	33.4	25.2	15.25	12.90
				2	1600	44.0	33.6		12.00
	PV8*C20	MC61D	24	1	1030	33.8	26.1	15.50	13.20
				2	1500	47.0	36.7		12.00
P(C,V)9*D20	MC61D	24	1	1020	33.8	25.4	15.50	13.05	
			2	1600	44.5	33.8		12.00	
CZE06011	PV8*C20	FC/PC60C	21	1	1120	38.5	28.9	13.50	11.50
				2	1730	54.5	42.1		11.00
	P(C,V)9*C20	FC/PC60C	21	1	1040	38.5	28.9	13.25	11.35
				2	1620	54.0	38.6		11.00
	PV8*C20	FC/MC/PC60D	24	1	1120	38.5	28.9	13.50	11.50
				2	1730	54.5	42.1		11.00
	P(C,V)9*D20	FC/MC/PC60D	24	1	1030	38.5	28.9	13.25	11.40
				2	1620	54.0	38.6		11.00
	P(C,V)9*D20	HC60	24	1	1030	38.5	28.9	13.25	11.40
				2	1620	54.0	38.6		11.00
	PV8*C20	HD60	-	1	1120	38.5	28.9	13.25	11.50
				2	1620	54.0	42.1		11.00
	P(C,V)9*D20	HD60	-	1	1030	38.5	28.9	13.50	11.40
				2	1620	54.0	38.6		11.00
	P(C,V)9*C20	MC61D	24	1	1030	38.5	29.1	13.25	11.50
				2	1640	54.5	38.8		11.00
	P(C,V)9*D20	MC61D	24	1	1030	38.5	29.1	13.50	11.50
				2	1620	54.5	38.8		11.00

1 MC coils available with a factory installed horizontal drain pan.

ACCESSORIES*

Hard Start Kit (024-31994-000, 024-31995-000) - Provides increased starting torque for areas with low voltage.

TXV Kits - 1TVM9 series thermal expansion valves precisely meter refrigerant for optimum performance

Dehumidistat (2HU16700124) - Provides increased dehumidification when matched with variable speed furnace or air handler.

Room Thermostats - A wide selection of compatible thermostats are available to provide optimum performance and features for any installation.

1 Heat Stage only, manual, mechanical thermostat. Add sub-base for 3H/2C.

3H/2C, manual change-over electronic non-programmable thermostat.

3H/2C, auto/manual change-over, electronic programmable, deluxe 7-day, thermostat.

3H/2C, auto/manual change-over, electronic programmable.

* For the most current accessory information, refer to the price book or consult factory.

SOUND POWER RATINGS*

UNIT MODEL	(dBA)
024	71
036	73
038	70
048	72
060	74

* Rated in accordance with ARI 270-95 Standards.

COLOR GRILLES

CHOICE OF SEVERAL COLOR COIL GRILLES TO COMPLIMENT ANY HOME.		
Color Grill	Color Description	
1CP0130	Terra Cotta	024
1CP0136	Terra Cotta	036, 038, 048, 060
1CP0230	Jet Black	024
1CP0236	Jet Black	036, 038, 048, 060
1CP0330	Stone	024
1CP0336	Stone	036, 048, 060
1CP0430	Bermuda	024
1CP0436	Bermuda	036, 038, 048, 060
1CP0530	Gunmetal	024
1CP0536	Gunmetal	036, 038, 048, 060
1CP0630	Chocolate	024
1CP0636	Chocolate	036, 038, 048, 060

COOLING PERFORMANCE DATA - LOW CFM 1-STAGE OPERATION																	
OUTDOOR UNIT MODEL NO.		CZE02411															
INDOOR COIL MODEL NO.		FC/MC36B + MV12B															
CONDENSER ENTERING AIR TEMPERATURE	ID CFM	550					600					650					
	ID DB (°F)	80	80	75	80	80	80	80	75	80	80	80	80	75	80	80	
	ID WB (°F)	57	62	62	67	72	57	62	62	67	72	57	62	62	67	72	
65	T.C.	16.5	17.0	16.4	15.3	19.2	17.1	17.2	16.5	17.2	19.6	17.6	17.5	16.6	19.0	20.0	
	S.C.	17.0	16.3	13.7	11.9	10.9	17.5	17.1	14.0	13.6	11.2	17.9	18.0	14.2	15.2	11.5	
	K.W.	0.8	0.7	0.7	0.5	0.7	0.7	0.7	0.8	0.6	0.7	0.6	0.7	0.8	0.7	0.7	
75	T.C.	15.8	16.1	15.4	17.2	18.3	16.3	16.4	15.7	17.6	18.6	16.9	16.7	16.0	18.0	18.9	
	S.C.	16.2	15.7	13.1	13.4	10.6	16.7	16.5	13.5	14.0	10.8	17.2	17.3	13.9	14.6	11.1	
	K.W.	0.9	0.9	0.9	0.9	0.8	0.8	0.8	0.9	0.9	0.9	0.8	0.8	0.9	0.9	0.9	
85	T.C.	15.1	15.2	14.5	19.0	17.4	15.6	15.6	15.0	18.1	17.6	16.2	15.9	15.4	17.1	17.7	
	S.C.	15.4	15.2	12.5	14.9	10.3	15.9	15.9	13.0	14.5	10.5	16.4	16.7	13.5	14.0	10.6	
	K.W.	1.0	1.0	1.0	1.3	1.0	1.0	1.0	1.0	1.1	1.0	0.9	0.9	1.0	1.0	1.0	
95	T.C.	14.4	14.3	13.5	20.9	16.5	14.9	14.7	14.2	18.5	16.6	15.5	15.1	14.8	16.1	16.6	
	S.C.	14.6	14.6	11.9	16.4	10.0	15.2	15.3	12.5	14.9	10.1	15.7	16.0	13.2	13.3	10.2	
	K.W.	1.2	1.2	1.2	1.6	1.1	1.1	1.1	1.2	1.4	1.2	1.1	1.1	1.2	1.2	1.2	
105	T.C.	13.7	13.3	12.5	19.5	15.5	14.1	13.8	13.0	17.2	15.4	14.6	14.2	13.5	15.0	15.3	
	S.C.	13.9	13.7	11.2	15.7	9.6	14.4	14.4	11.9	14.3	9.7	14.8	15.0	12.5	12.9	9.8	
	K.W.	1.4	1.4	1.4	1.9	1.3	1.3	1.3	1.4	1.6	1.3	1.3	1.3	1.4	1.4	1.4	
115	T.C.	13.0	12.4	11.5	18.1	14.4	13.4	12.9	11.9	16.0	14.3	13.8	13.4	12.3	13.9	14.1	
	S.C.	13.1	12.9	10.6	15.0	9.3	13.6	13.5	11.2	13.7	9.4	14.0	14.1	11.9	12.5	9.5	
	K.W.	1.6	1.6	1.6	2.1	1.5	1.5	1.5	1.5	1.8	1.5	1.5	1.5	1.5	1.6	1.6	
125	T.C.	12.3	11.4	10.5	16.7	13.3	12.6	12.0	10.7	14.8	13.1	13.0	12.6	11.0	12.8	12.9	
	S.C.	12.4	12.1	9.9	14.3	8.9	12.8	12.6	10.6	13.2	9.0	13.2	13.1	11.3	12.1	9.1	
	K.W.	1.7	1.8	1.7	2.4	1.7	1.7	1.7	1.7	2.1	1.7	1.7	1.7	1.7	1.7	1.7	

NOTE: ALL CAPACITIES ARE NET (KBTUH) WITH INDOOR FAN HEAT ALREADY DEDUCTED AT 1250 BTUH/1000 CFM.

Multipliers for determining the performance with other indoor sections.

NOTE: For dry bulb temperatures different than those listed (between 73-87 F), sensible capacity increases by 1060 BTUH per 1000 CFM per degree above the listed temperature and decreases by 1060 BTUH per 1000 CFM per degree below the listed temperature.

NOTE: KW RATING IS FOR OUTDOOR AND INDOOR UNITS.

LOW CFM

Air Handler	Coil	T.C.	S.C.	KW
AV24	-	1.00	1.00	1.00

Variable Speed Furnace	Coil	T.C.	S.C.	KW
PV8*A12	FC/MC/PC24A	0.99	0.99	1.01
PV9*A12	FC/MC/PC24A	0.99	0.99	1.01
P(C,V)9*B12	FC/MC/PC24B	0.99	0.99	1.01
PV8*A12	FC/MC/PC30A	0.99	0.99	1.01
PV9*A12	FC/MC/PC30A	0.99	0.99	1.01
P(C,V)9*B12	FC/MC/PC30B	0.99	0.99	1.01
PV8*A12	FC/MC/PC36A	0.99	0.98	0.99
P(C,V)9*B12	FC/MC/PC36A	0.99	0.98	0.99
P(C,V)9*B12	FC/MC/PC36B	0.99	0.98	0.99
PV9*A12	HD36	0.99	0.99	1.01

COOLING PERFORMANCE DATA - HIGH CFM 2-STAGE OPERATION																
OUTDOOR UNIT MODEL NO.		CZE02411														
INDOOR COIL MODEL NO.		FC/MC36B + MV12B														
CONDENSER ENTERING AIR TEMPERATURE	ID CFM	700					800					900				
	ID DB (°F)	80	80	75	80	80	80	80	75	80	80	80	80	75	80	80
	ID WB (°F)	57	62	62	67	72	57	62	62	67	72	57	62	62	67	72
65	T.C.	24.4	25.4	24.4	27.1	28.8	25.2	25.7	24.8	27.4	29.1	26.0	26.0	25.2	27.8	29.3
	S.C.	24.4	23.9	19.6	19.7	15.7	25.1	24.7	20.3	20.3	16.1	25.9	25.6	21.0	21.0	16.4
	K.W.	1.3	24.1	1.3	1.4	1.4	1.3	12.7	1.3	1.4	1.4	1.3	1.3	1.3	1.4	1.4
75	T.C.	23.7	24.2	23.3	26.0	27.5	24.4	24.6	23.7	26.3	27.7	25.1	25.1	24.1	26.6	27.9
	S.C.	23.6	23.1	19.0	19.2	15.2	24.3	24.0	19.7	19.9	15.6	25.0	24.8	20.4	20.5	15.9
	K.W.	1.5	16.7	1.5	1.5	1.6	1.5	9.1	1.5	1.5	1.6	1.5	1.5	1.5	1.5	1.6
85	T.C.	23.0	22.9	22.2	24.9	26.1	23.6	23.5	22.6	25.1	26.3	24.2	24.1	22.9	25.4	26.6
	S.C.	22.9	22.2	18.4	18.8	14.6	23.4	23.2	19.1	19.4	15.1	24.0	24.1	19.8	20.1	15.5
	K.W.	1.7	9.2	1.7	1.7	1.8	1.7	5.5	1.7	1.7	1.8	1.7	1.7	1.7	1.7	1.8
95	T.C.	22.3	21.7	21.2	23.8	24.8	22.8	22.4	21.5	24.0	25.0	23.3	23.2	21.8	24.2	25.2
	S.C.	22.1	21.4	17.9	18.4	14.1	22.6	22.4	18.5	19.0	14.6	23.0	23.4	19.2	19.6	15.0
	K.W.	1.9	1.8	1.9	1.9	2.0	1.9	1.9	1.9	1.9	2.0	1.9	1.9	1.9	1.9	2.0
105	T.C.	21.1	20.4	19.7	22.1	23.0	21.6	21.1	20.1	22.4	23.2	22.1	21.7	20.3	22.7	23.4
	S.C.	21.0	20.4	17.0	17.5	13.5	21.4	21.2	17.6	18.1	13.9	21.8	22.0	18.3	18.7	14.3
	K.W.	2.2	2.1	2.2	2.2	2.3	2.2	2.2	2.2	2.2	2.3	2.2	2.2	2.2	2.2	2.3
115	T.C.	20.0	19.2	18.4	20.6	21.2	20.5	19.8	18.7	20.9	21.5	20.9	20.2	19.0	21.1	21.7
	S.C.	20.0	19.5	16.1	16.7	13.0	20.3	20.1	16.8	17.3	13.3	20.7	20.6	17.4	17.8	13.7
	K.W.	2.5	2.4	2.5	2.5	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
125	T.C.	18.9	18.0	17.0	19.0	19.5	19.3	18.4	17.3	19.3	19.8	19.7	18.8	17.6	19.6	20.0
	S.C.	18.9	18.6	15.2	15.9	12.4	19.2	18.9	15.9	16.5	12.7	19.5	19.3	16.6	17.0	13.0
	K.W.	2.8	2.7	2.7	2.8	2.8	2.8	2.7	2.7	2.8	2.8	2.8	2.8	2.8	2.8	2.8

NOTE: ALL CAPACITIES ARE NET (KBTUH) WITH INDOOR FAN HEAT ALREADY DEDUCTED AT 1250 BTUH/1000 CFM.

Multipliers for determining the performance with other indoor sections.

NOTE: For dry bulb temperatures different than those listed (between 73-87 F), sensible capacity increases by 1060 BTUH per 1000 CFM per degree above the listed temperature and decreases by 1060 BTUH per 1000 CFM per degree below the listed temperature.

NOTE: KW RATING IS FOR OUTDOOR AND INDOOR UNITS.

HIGH CFM

Air Handler	Coil	T.C.	S.C.	KW
AV24	-	1.00	1.00	1.00

Variable Speed Furnace	Coi	T.C.	S.C.	KW
PV8*A12	FC/MC/PC24A	0.98	0.99	1.02
PV9*A12	FC/MC/PC24A	0.98	0.99	1.02
P(C,V)9*B12F	FC/MC/PC24B	0.98	0.99	1.02
PV8*A12	FC/MC/PC30A	0.98	0.99	1.02
PV9*A12	FC/MC/PC30A	0.98	0.99	1.02
P(C,V)9*B12	FC/MC/PC30B	0.98	0.99	1.02
PV8*A12	FC/MC/PC36A	0.99	1.00	1.00
P(C,V)9*B12	FC/MC/PC36A	0.99	1.00	1.00
P(C,V)9*B12	FC/MC/PC36B	0.99	1.00	1.00
PV9*A12	HD36	0.98	0.99	1.02

COOLING PERFORMANCE DATA - LOW CFM 1-STAGE OPERATION																
OUTDOOR UNIT MODEL NO.		CZE03611														
INDOOR COIL MODEL NO.		FC/MC48C + MV16C														
CONDENSER ENTERING AIR TEMPERATURE	ID CFM	750					800					850				
	ID DB (°F)	80	80	75	80	80	80	80	75	80	80	80	80	75	80	80
	ID WB (°F)	57	62	62	67	72	57	62	62	67	72	57	62	62	67	72
65	T.C.	26.9	27.8	26.7	30.6	31.8	27.4	27.9	27.1	30.8	32.3	28.0	27.9	27.4	31.1	32.7
	S.C.	25.7	25.5	20.0	20.1	16.1	26.3	24.9	20.7	20.9	16.4	26.8	24.3	21.3	21.7	16.8
	K.W.	1.2	1.3	1.2	1.2	1.2	1.2	1.2	1.3	1.2	1.2	1.2	1.2	1.3	1.2	1.2
75	T.C.	25.1	26.1	25.4	28.8	30.6	25.6	26.2	25.7	29.0	31.0	26.2	26.4	26.0	29.2	31.3
	S.C.	24.3	23.9	19.3	19.4	15.5	24.9	23.8	20.0	20.2	15.9	25.5	23.7	20.6	20.9	16.3
	K.W.	1.5	1.5	1.5	1.4	1.4	1.5	1.5	1.5	1.4	1.4	1.5	1.5	1.5	1.4	1.4
85	T.C.	23.2	24.4	24.1	27.0	29.3	23.8	24.6	24.3	27.2	29.7	24.4	24.9	24.6	27.4	30.0
	S.C.	23.0	22.4	18.6	18.7	15.0	23.6	22.7	19.3	19.4	15.4	24.3	23.1	19.9	20.1	15.9
	K.W.	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
95	T.C.	21.3	22.7	22.8	25.2	28.1	22.0	23.0	23.0	25.4	28.4	22.7	23.4	23.2	25.5	28.6
	S.C.	21.7	20.9	17.9	18.1	14.4	22.3	21.7	18.6	18.7	14.9	23.0	22.4	19.2	19.3	15.5
	K.W.	2.0	2.0	2.0	1.9	1.9	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
105	T.C.	20.3	21.3	21.2	23.6	26.2	20.9	21.6	21.5	23.7	26.4	21.5	21.8	21.7	23.9	26.6
	S.C.	20.6	19.7	17.1	17.4	13.8	21.2	20.4	17.7	18.0	14.2	21.8	21.0	18.3	18.6	14.7
	K.W.	2.3	2.3	2.3	2.3	2.2	2.3	2.3	2.3	2.3	2.2	2.3	2.3	2.3	2.3	2.2
115	T.C.	19.4	20.0	19.7	22.0	24.3	19.8	20.2	20.0	22.1	24.5	20.3	20.3	20.2	22.2	24.6
	S.C.	19.6	18.5	16.3	16.7	13.2	20.1	19.1	16.9	17.3	13.6	20.6	19.7	17.5	17.9	13.9
	K.W.	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
125	T.C.	18.4	18.7	18.3	20.5	22.4	18.7	18.7	18.5	20.5	22.6	19.1	18.8	18.7	20.6	22.7
	S.C.	18.6	17.4	15.5	16.1	12.6	19.0	17.8	16.1	16.7	12.9	19.4	18.3	16.6	17.2	13.2
	K.W.	3.0	2.9	3.0	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9

NOTE: ALL CAPACITIES ARE NET (KBTUH) WITH INDOOR FAN HEAT ALREADY DEDUCTED AT 1250 BTUH/1000 CFM.87

Multipliers for determining the performance with other indoor sections.

NOTE: For dry bulb temperatures different than those listed (between 73-87 F), sensible capacity increases by 1060 BTUH per 1000 CFM per degree above the listed temperature and decreases by 1060 BTUH per 1000 CFM per degree below the listed temperature.

NOTE: KW RATING IS FOR OUTDOOR AND INDOOR UNITS.

LOW CFM

Air Handler	Coil	T.C.	S.C.	KW
AV/SV48	-	1.00	1.00	1.00
MV12B	FC/MC42B	0.97	0.94	1.01
MV20D	FC/MC48D	1.00	1.01	1.00

Variable Speed Furnace	Coil	T.C.	S.C.	KW
PV8*B16	FC/MC/PC42B	0.98	0.96	1.01
P(C,V)9*B12	FC/MC/PC42B	0.98	0.94	1.03
PV8*C16	FC/MC/PC42C	0.98	0.94	1.03
PV8*C20	FC/MC/PC42C	0.98	0.94	1.03
P(C,V)9*C16	FC/MC/PC42C	0.98	0.94	1.03
P(C,V)9*C20	FC/MC/PC42C	0.98	0.94	1.03
PV8*C16	FC/MC/PC48C	1.00	1.02	1.00
PV8*C20	FC/MC/PC48C	1.00	1.02	1.00
P(C,V)9*C16	FC/MC/PC48C	1.00	1.01	1.01
P(C,V)9*C20	FC/MC/PC48C	1.00	1.01	1.01
P(C,V)9*D20	FC/MC/PC48D	1.00	1.01	1.01
PV8*C20	HC42	0.98	0.94	1.03
P(C,V)9*C20	HC42	0.98	0.94	1.03
PV8*C20	HD48	0.98	0.94	1.03
P(C,V)9*C20	HD48	0.98	0.94	1.03

COOLING PERFORMANCE DATA - HIGH CFM 2-STAGE OPERATION																
OUTDOOR UNIT MODEL NO.		CZE03611														
INDOOR COIL MODEL NO.		FC/MC48C + MV16C														
CONDENSER ENTERING AIR TEMPERATURE	ID CFM	1100					1200					1300				
	ID DB (°F)	80	80	75	80	80	80	80	75	80	80	80	80	75	80	80
	ID WB (°F)	57	62	62	67	72	57	62	62	67	72	57	62	62	67	72
65	T.C.	34.1	36.8	36.5	38.0	39.8	34.7	37.1	36.6	37.5	39.3	35.4	37.3	36.6	37.1	38.8
	S.C.	35.3	32.2	26.2	26.1	20.1	36.6	32.8	28.0	25.9	20.3	37.0	33.5	29.8	25.7	20.5
	K.W.	1.9	2.0	2.1	2.0	2.0	1.9	2.0	2.1	2.0	2.1	2.0	2.0	2.0	2.0	2.1
75	T.C.	33.2	35.5	35.1	37.3	39.1	33.9	35.7	35.3	37.0	38.8	34.6	36.0	35.5	36.8	38.5
	S.C.	34.5	32.0	26.3	26.1	20.3	35.6	32.7	27.9	26.3	20.5	36.8	33.4	29.4	26.5	20.7
	K.W.	2.2	2.2	2.3	2.3	2.3	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.4
85	T.C.	32.4	34.1	33.8	36.5	38.5	33.1	34.4	34.1	36.5	38.4	33.8	34.6	34.3	36.5	38.3
	S.C.	33.7	31.7	26.5	26.2	20.5	34.6	32.6	27.8	26.8	20.7	35.5	33.4	29.0	27.3	20.8
	K.W.	2.5	2.5	2.6	2.6	2.6	2.5	2.5	2.5	2.6	2.6	2.6	2.6	2.5	2.6	2.6
95	T.C.	31.6	32.7	32.4	35.8	37.8	32.3	33.0	32.8	36.0	37.9	32.9	33.3	33.2	36.2	38.0
	S.C.	32.9	31.5	26.6	26.3	20.6	33.6	32.4	27.6	27.2	20.8	34.3	33.3	28.6	28.1	21.0
	K.W.	2.8	2.8	2.8	2.8	2.9	2.8	2.8	2.8	2.9	2.9	2.8	2.8	2.8	2.9	2.9
105	T.C.	29.1	30.7	30.5	33.5	34.7	29.9	30.9	30.8	33.7	35.5	30.7	31.1	31.1	33.9	36.2
	S.C.	30.3	30.3	25.2	25.1	21.4	31.1	30.6	26.1	26.0	20.9	32.0	30.8	27.0	26.9	20.5
	K.W.	3.2	3.2	3.2	3.3	3.3	3.2	3.2	3.2	3.3	3.3	3.3	3.3	3.2	3.3	3.3
115	T.C.	26.7	28.8	28.5	31.3	31.7	27.6	28.9	28.9	31.5	33.1	28.5	29.0	29.1	31.8	34.4
	S.C.	27.7	29.1	23.8	23.9	22.1	28.8	28.8	24.6	24.8	21.0	29.8	28.4	25.4	25.7	19.9
	K.W.	3.6	3.6	3.6	3.7	3.7	3.7	3.6	3.6	3.7	3.7	3.7	3.7	3.7	3.7	3.7
125	T.C.	24.2	26.9	26.6	29.0	28.8	25.3	26.9	26.9	29.4	30.7	26.3	26.9	27.2	29.6	32.7
	S.C.	25.1	27.9	22.4	22.7	22.9	26.4	27.0	23.1	23.6	21.1	27.6	26.0	23.8	24.5	19.3
	K.W.	4.0	4.0	4.0	4.1	4.1	4.1	4.1	4.0	4.1	4.1	4.1	4.1	4.1	4.1	4.2

NOTE: ALL CAPACITIES ARE NET (KBTUH) WITH INDOOR FAN HEAT ALREADY DEDUCTED AT 1250 BTUH/1000 CFM.

Multipliers for determining the performance with other indoor sections.

NOTE: For dry bulb temperatures different than those listed (between 73-87 F), sensible capacity increases by 1060 BTUH per 1000 CFM per degree above the listed temperature and decreases by 1060 BTUH per 1000 CFM per degree below the listed temperature.

NOTE: KW RATING IS FOR OUTDOOR AND INDOOR UNITS.

HIGH CFM

Air Handler	Coil	T.C.	S.C.	KW
AV/SV48	-	1.00	1.00	1.00
MV12B	FC/MC42B	0.97	0.97	1.01
MV20D	FC/MC48D	1.00	1.01	1.00

Variable Speed Furnace	Coil	T.C.	S.C.	KW
PV8*B16	FC/MC/PC42B	0.98	1.00	1.01
P(C,V)9*B12	FC/MC/PC42B	0.98	0.88	1.03
PV8*C16	FC/MC/PC42C	1.00	1.01	1.00
PV8*C20	FC/MC/PC42C	1.00	1.01	1.00
P(C,V)9*C16	FC/MC/PC42C	1.00	0.94	1.01
P(C,V)9*C20	FC/MC/PC42C	1.00	0.94	1.01
PV8*C16	FC/MC/PC48C	1.00	1.01	1.00
PV8*C20	FC/MC/PC48C	1.00	1.01	1.00
P(C,V)9*C16	FC/MC/PC48C	1.00	0.94	1.01
P(C,V)9*C20	FC/MC/PC48C	1.00	0.94	1.01
P(C,V)9*D20	FC/MC/PC48D	1.00	0.94	1.01
PV8*C20	HC42	1.00	1.01	1.00
P(C,V)9*C20	HC42	1.00	0.94	1.01
PV8*C20	HD48	1.00	1.01	1.00
P(C,V)9*C20	HD48	1.00	0.94	1.01

COOLING PERFORMANCE DATA - LOW CFM 1-STAGE OPERATION																
OUTDOOR UNIT MODEL NO.		CZE03811														
INDOOR COIL MODEL NO.		FC/MC61D + MV12D														
CONDENSER ENTERING AIR TEMPERATURE	ID CFM	700					750					800				
	ID DB (°F)	80	80	75	80	80	80	80	75	80	80	80	80	75	80	80
	ID WB (°F)	57	62	62	67	72	57	62	62	67	72	57	62	62	67	72
65	T.C.	22.3	24.6	25.5	28.6	30.4	23.3	24.9	26.2	28.9	31.5	24.3	25.3	26.8	29.2	32.7
	S.C.	22.2	21.3	18.4	18.2	15.0	23.2	22.2	19.2	18.9	15.3	24.2	23.1	20.0	19.5	15.5
	K.W.	1.2	1.1	1.0	1.0	1.0	1.1	1.1	1.0	1.0	1.0	1.1	1.1	1.0	1.0	1.0
75	T.C.	21.2	23.0	23.9	27.0	29.2	22.1	23.4	24.4	27.3	30.1	23.0	23.7	25.0	27.6	30.9
	S.C.	21.1	20.5	17.6	17.6	14.3	22.0	21.4	18.4	18.2	14.6	22.9	22.3	19.2	18.9	14.9
	K.W.	1.3	1.3	1.2	1.2	1.2	1.3	1.3	1.2	1.2	1.2	1.3	1.3	1.2	1.2	1.2
85	T.C.	20.1	21.5	22.2	25.4	28.0	20.9	21.8	22.7	25.7	28.6	21.7	22.1	23.1	25.9	29.2
	S.C.	20.0	19.7	16.8	17.0	13.6	20.8	20.6	17.6	17.6	13.9	21.6	21.5	18.3	18.3	14.3
	K.W.	1.5	1.5	1.4	1.4	1.4	1.5	1.5	1.4	1.4	1.4	1.5	1.5	1.4	1.4	1.4
95	T.C.	19.0	19.9	20.5	23.9	26.8	19.7	20.2	20.9	24.1	27.1	20.5	20.6	21.3	24.3	27.5
	S.C.	18.9	19.0	16.0	16.4	12.9	19.6	19.8	16.8	17.0	13.3	20.4	20.7	17.5	17.6	13.6
	K.W.	1.7	1.7	1.6	1.6	1.6	1.7	1.7	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
105	T.C.	17.7	18.3	18.5	21.7	24.5	18.4	18.7	19.0	21.9	24.8	19.1	19.2	19.4	22.1	25.2
	S.C.	17.6	17.9	15.2	15.6	12.2	18.3	18.7	15.9	16.2	12.6	18.9	19.4	16.6	16.8	12.9
	K.W.	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
115	T.C.	16.4	16.7	16.6	19.6	22.3	17.1	17.2	17.1	19.7	22.6	17.7	17.8	17.6	19.9	23.0
	S.C.	16.3	16.9	14.4	14.8	11.5	17.0	17.6	15.0	15.4	11.9	17.6	18.2	15.7	16.0	12.3
	K.W.	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
125	T.C.	15.2	15.1	14.7	17.5	20.1	15.7	15.7	15.2	17.6	20.4	16.3	16.4	15.8	17.7	20.7
	S.C.	15.1	15.9	13.6	14.1	10.7	15.6	16.5	14.2	14.6	11.2	16.2	17.0	14.8	15.2	11.6
	K.W.	2.4	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.4

NOTE: ALL CAPACITIES ARE NET (KBTUH) WITH INDOOR FAN HEAT ALREADY DEDUCTED AT 1250 BTUH/1000 CFM.

Multipliers for determining the performance with other indoor sections.

NOTE: For dry bulb temperatures different than those listed (between 73-87 F), sensible capacity increases by 1060 BTUH per 1000 CFM per degree above the listed temperature and decreases by 1060 BTUH per 1000 CFM per degree below the listed temperature.

NOTE: KW RATING IS FOR OUTDOOR AND INDOOR UNITS.

LOW CFM

Air Handler	Coil	T.C.	S.C.	KW
AV/SV48	-	0.98	0.99	0.99
F*FV060	-	0.98	0.99	0.99
MV12B	FC/MC42B	0.99	0.98	1.01
MV16C	FC/MC48C	0.99	0.99	1.00
MV12D	FC/MC48D	0.99	0.99	1.00
MV20D	FC/MC48D	0.98	0.99	0.99
MV12D	FC/MC60D	0.99	0.99	0.99
MV20D	MC60D	0.98	0.99	0.99
MV20D	MC61D	0.99	1.00	1.00

Variable Speed Furnace	Coil	T.C.	S.C.	KW
PV8*B16	FC/MC/PC42B	0.96	0.90	1.00
PV8*C16	FC/MC/PC42C	0.98	0.91	1.00
PV8*C20	FC/MC/PC42C	0.98	0.91	1.00
P(C,V)9*C16	FC/MC/PC42C	1.01	1.02	1.03
P(C,V)9*C20	FC/MC/PC42C	0.99	1.02	1.03
PV8*C16	FC/MC/PC48C	0.98	0.91	1.00
PV8*C20	FC/MC/PC48C	0.98	0.91	1.00
P(C,V)9*C16	FC/MC/PC48C	1.01	1.02	1.03
P(C,V)9*C20	FC/MC/PC48C	0.99	1.02	1.03
P(C,V)9*D20	FC/MC/PC48D	0.98	1.00	1.02
PV8*C16	FC/PC60C	0.98	0.91	1.00
PV8*C20	FC/PC60C	0.98	0.91	1.00
P(C,V)9*C16	FC/PC60C	1.01	1.02	1.03
P(C,V)9*C20	FC/PC60C	0.99	1.02	1.03
P(C,V)9*D20	FC/MC/PC60D	0.99	1.02	1.03
PV8*C16	HC42	0.98	0.91	1.00
PV8*C20	HC42	0.98	0.91	1.00
P(C,V)9*C16	HC42	1.01	1.02	1.03
P(C,V)9*C20	HC42	0.99	1.02	1.03
P(C,V)9*D20	HC60	0.99	1.02	1.03
PV8*C16	HD48	0.98	0.91	1.00
PV8*C20	HD48	0.98	0.91	1.00
P(C,V)9*C16	HD48	1.01	1.02	1.03
P(C,V)9*C20	HD48	0.99	1.02	1.03
P(C,V)9*D20	HD60	0.99	1.02	1.03
P(C,V)9*D20	MC61D	1.00	1.01	1.02

COOLING PERFORMANCE DATA - HIGH CFM 2-STAGE OPERATION																
OUTDOOR UNIT MODEL NO.		CZE03811														
INDOOR COIL MODEL NO.		FC/MC61D + MV12D														
CONDENSER ENTERING AIR TEMPERATURE	ID CFM	1050					1150					1250				
	ID DB (°F)	80	80	75	80	80	80	80	75	80	80	80	80	75	80	80
	ID WB (°F)	57	62	62	67	72	57	62	62	67	72	57	62	62	67	72
65	T.C.	34.2	33.4	36.9	41.1	44.9	35.2	35.6	37.6	41.7	45.8	36.2	37.8	38.2	42.3	46.7
	S.C.	34.1	34.3	26.6	26.6	21.0	35.0	34.6	27.9	27.9	21.8	36.0	34.8	29.3	29.1	22.7
	K.W.	1.7	1.7	1.7	1.7	1.8	1.7	1.7	1.7	1.7	1.8	1.7	1.7	1.7	1.8	1.8
75	T.C.	32.6	32.5	34.9	38.9	42.9	33.5	34.1	35.5	39.4	43.7	34.4	35.7	36.0	40.0	44.5
	S.C.	32.5	32.3	25.7	25.8	20.3	33.4	32.9	27.0	27.0	21.1	34.2	33.4	28.3	28.2	22.0
	K.W.	1.9	1.9	1.9	2.0	2.0	1.9	1.9	1.9	2.0	2.0	1.9	1.9	1.9	2.0	2.0
85	T.C.	31.1	31.5	32.9	36.6	40.8	31.9	32.5	33.4	37.1	41.6	32.7	33.6	33.8	37.7	42.3
	S.C.	30.9	30.3	24.9	24.9	19.6	31.7	31.2	26.1	26.1	20.5	32.5	32.1	27.4	27.3	21.3
	K.W.	2.1	2.2	2.2	2.2	2.3	2.1	2.2	2.2	2.2	2.3	2.2	2.2	2.2	2.2	2.3
95	T.C.	29.5	30.6	30.9	34.4	38.8	30.2	31.0	31.3	34.9	39.5	31.0	31.4	31.7	35.4	40.1
	S.C.	29.3	28.3	24.1	24.0	19.0	30.1	29.5	25.2	25.2	19.8	30.8	30.7	26.4	26.4	20.6
	K.W.	2.4	2.4	2.4	2.5	2.5	2.4	2.4	2.4	2.5	2.5	2.4	2.4	2.4	2.5	2.5
105	T.C.	27.7	28.5	28.6	31.8	36.0	28.4	29.0	28.9	32.3	36.5	29.2	29.6	29.2	32.7	37.1
	S.C.	27.5	27.1	23.0	23.0	18.1	28.3	28.1	24.1	24.2	18.8	29.0	29.1	25.2	25.5	19.6
	K.W.	2.7	2.8	2.8	2.8	2.9	2.8	2.8	2.8	2.8	2.9	2.8	2.8	2.8	2.8	2.9
115	T.C.	25.9	26.4	26.3	29.3	33.3	26.7	27.1	26.6	29.7	33.7	27.4	27.7	26.8	30.2	34.1
	S.C.	25.8	26.0	22.0	22.1	17.2	26.5	26.8	23.0	23.3	17.9	27.2	27.6	24.0	24.5	18.6
	K.W.	3.1	3.1	3.1	3.2	3.2	3.1	3.1	3.1	3.2	3.2	3.2	3.2	3.1	3.2	3.2
125	T.C.	24.2	24.3	24.1	26.8	30.5	24.9	25.1	24.3	27.2	30.8	25.6	25.9	24.5	27.6	31.2
	S.C.	24.1	24.8	21.0	21.1	16.3	24.8	25.4	21.9	22.4	16.9	25.4	26.0	22.8	23.6	17.6
	K.W.	3.5	3.5	3.5	3.5	3.6	3.5	3.5	3.5	3.5	3.6	3.5	3.5	3.5	3.5	3.6

NOTE: ALL CAPACITIES ARE NET (KBTUH) WITH INDOOR FAN HEAT ALREADY DEDUCTED AT 1250 BTUH/1000 CFM.

Multipliers for determining the performance with other indoor sections.

NOTE: For dry bulb temperatures different than those listed (between 73-87 F), sensible capacity increases by 1060 BTUH per 1000 CFM per degree above the listed temperature and decreases by 1060 BTUH per 1000 CFM per degree below the listed temperature.

NOTE: KW RATING IS FOR OUTDOOR AND INDOOR UNITS.

HIGH CFM

Air Handler	Coil	T.C.	S.C.	KW
AV/SV48	-	0.99	0.99	1.00
F*FV060	-	0.99	0.99	1.00
MV12B	FC/MC42B	0.98	0.97	1.01
MV16C	FC/MC48C	0.99	0.99	1.00
MV12D	FC/MC48D	0.99	0.99	1.00
MV20D	FC/MC48D	0.99	0.99	1.00
MV12D	FC/MC60D	0.99	0.99	1.00
MV20D	FC/MC60D	0.99	0.99	1.00
MV20D	MC61D	0.99	1.00	1.00

Variable Speed Furnace	Coil	T.C.	S.C.	KW
PV8*B16	FC/MC/PC42B	0.99	1.00	1.01
PV8*C16	FC/MC/PC42C	1.00	1.00	1.01
PV8*C20	FC/MC/PC42C	1.00	1.00	1.01
P(C,V)9*C16	FC/MC/PC42C	0.99	1.00	1.02
P(C,V)9*C20	FC/MC/PC42C	0.99	1.00	1.02
PV8*C16	FC/MC/PC48C	1.00	1.00	1.01
PV8*C20	FC/MC/PC48C	1.00	1.00	1.01
P(C,V)9*C16	FC/MC/PC48C	0.99	1.00	1.02
P(C,V)9*C20	FC/MC/PC48C	0.99	1.00	1.02
P(C,V)9*D20	FC/MC/PC48D	0.99	1.00	1.02
PV8*C16	FC/PC60C	1.00	1.00	1.01
PV8*C20	FC/PC60C	1.00	1.00	1.01
P(C,V)9*C16	FC/PC60C	0.99	1.00	1.02
P(C,V)9*C20	FC/PC60C	0.99	1.00	1.02
P(C,V)9*D20	FC/MC/PC60D	0.99	1.00	1.02
PV8*C16	HC42	1.00	1.00	1.01
PV8*C20	HC42	1.00	1.00	1.01
P(C,V)9*C16	HC42	0.99	1.00	1.02
P(C,V)9*C20	HC42	0.99	1.00	1.02
P(C,V)9*D20	HC60	0.99	1.00	1.02
PV8*C16	HD48	1.00	1.00	1.01
PV8*C20	HD48	1.00	1.00	1.01
P(C,V)9*C16	HD48	0.99	1.00	1.02
P(C,V)9*C20	HD48	0.99	1.00	1.02
P(C,V)9*D20	HD60	0.99	1.00	1.02
P(C,V)9*D20	MC61D	0.99	1.00	1.02

COOLING PERFORMANCE DATA - LOW CFM 1-STAGE OPERATION																
OUTDOOR UNIT MODEL NO.		CZE04811														
INDOOR COIL MODEL NO.		FC/MC60D + MV20D														
CONDENSER ENTERING AIR TEMPERATURE	ID CFM	950					1000					1050				
	ID DB (°F)	80	80	75	80	80	80	80	75	80	80	80	80	75	80	80
	ID WB (°F)	57	62	62	67	72	57	62	62	67	72	57	62	62	67	72
65	T.C.	29.9	33.7	34.9	37.9	45.0	31.0	34.1	35.3	38.5	45.5	32.1	34.5	35.8	39.0	46.1
	S.C.	33.1	31.3	26.6	26.1	21.6	34.2	32.4	27.6	27.0	22.3	35.4	33.5	28.6	27.8	22.9
	K.W.	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
75	T.C.	28.3	31.6	32.6	36.3	42.7	29.3	32.1	33.1	36.8	43.2	30.4	32.5	33.5	37.3	43.7
	S.C.	31.3	30.0	25.4	25.5	20.9	32.4	31.1	26.4	26.4	21.5	33.5	32.1	27.4	27.2	22.1
	K.W.	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
85	T.C.	26.7	29.5	30.3	34.6	40.3	27.6	30.0	30.8	35.1	40.8	28.6	30.5	31.3	35.6	41.2
	S.C.	29.5	28.8	24.3	24.8	20.1	30.5	29.8	25.3	25.7	20.7	31.6	30.7	26.3	26.6	21.3
	K.W.	2.3	2.2	2.3	2.2	2.2	2.3	2.2	2.3	2.2	2.2	2.2	2.2	2.3	2.2	2.2
95	T.C.	25.1	27.5	28.0	32.9	38.0	26.0	28.0	28.5	33.4	38.4	26.9	28.5	29.0	33.9	38.8
	S.C.	27.7	27.6	23.2	24.2	19.3	28.7	28.5	24.2	25.1	19.9	29.7	29.3	25.1	26.0	20.5
	K.W.	2.6	2.6	2.6	2.5	2.5	2.6	2.5	2.6	2.5	2.5	2.6	2.5	2.6	2.5	2.5
105	T.C.	23.7	25.4	25.8	30.2	35.1	24.5	25.9	26.3	30.6	35.5	25.3	26.3	26.8	31.0	35.9
	S.C.	26.1	25.8	22.1	23.2	18.4	27.0	26.6	23.0	24.0	18.9	27.9	27.4	23.9	24.9	19.4
	K.W.	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
115	T.C.	22.4	23.4	23.7	27.7	32.2	23.0	23.8	24.1	28.0	32.6	23.7	24.2	24.6	28.3	33.0
	S.C.	24.6	23.9	21.0	22.2	17.5	25.4	24.7	21.9	23.0	18.0	26.2	25.5	22.8	23.8	18.4
	K.W.	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4
125	T.C.	21.1	21.4	21.6	25.1	29.3	21.6	21.8	22.0	25.3	29.7	22.1	22.1	22.4	25.5	30.1
	S.C.	23.0	22.1	19.9	21.2	16.5	23.7	22.9	20.8	22.0	17.0	24.4	23.6	21.6	22.7	17.4
	K.W.	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8

NOTE: ALL CAPACITIES ARE NET (KBTUH) WITH INDOOR FAN HEAT ALREADY DEDUCTED AT 1250 BTUH/1000 CFM.

Multipliers for determining the performance with other indoor sections.

NOTE: For dry bulb temperatures different than those listed (between 73-87 F), sensible capacity increases by 1060 BTUH per 1000 CFM per degree above the listed temperature and decreases by 1060 BTUH per 1000 CFM per degree below the listed temperature.

NOTE: KW RATING IS FOR OUTDOOR AND INDOOR UNITS.

LOW CFM

Air Handler	Coil	T.C.	S.C.	KW
AV/SV48	-	1.00	1.00	1.00
AV/SV60	-	1.00	1.00	1.00
F*FV060	-	1.00	1.00	1.00
MV20D	MC61D	1.00	1.01	0.99

Variable Speed Furnace	Coil	T.C.	S.C.	KW
PV8*C20	FC/PC60C	1.00	1.03	1.02
P(C,V)9*C20	FC/PC60C	0.94	1.00	0.93
PV8*C20	FC/MC/PC60D	1.00	1.03	1.02
P(C,V)9*D20	FC/MC/PC60D	0.94	1.00	0.92
PV8*C20	HC60	1.00	1.03	1.02
P(C,V)9*D20	HC60	0.94	1.00	0.92
PV8*C20	HD60	1.00	1.03	1.02
P(C,V)9*D20	HD60	0.94	1.00	0.92
PV8*C20	MC61D	1.00	1.04	1.00
P(C,V)9*D20	MC61D	0.95	1.01	0.93

COOLING PERFORMANCE DATA - HIGH CFM 2-STAGE OPERATION																
OUTDOOR UNIT MODEL NO.		CZE04811														
INDOOR COIL MODEL NO.		FC/MC60D + MV20D														
CONDENSER ENTERING AIR TEMPERATURE	ID CFM	1500					1600					1700				
	ID DB (°F)	80	80	75	80	80	80	80	75	80	80	80	80	75	80	80
	ID WB (°F)	57	62	62	67	72	57	62	62	67	72	57	62	62	67	72
65	T.C.	49.7	52.5	48.5	54.2	62.6	50.6	52.9	49.1	54.8	63.1	51.6	53.3	49.6	55.3	63.6
	S.C.	52.8	50.4	38.3	38.5	30.4	53.8	51.3	39.7	39.7	31.3	54.8	52.2	41.1	41.0	32.3
	K.W.	2.6	2.6	2.6	2.7	2.8	2.6	2.7	2.7	2.7	2.9	2.7	2.7	2.7	2.8	2.9
75	T.C.	47.4	49.9	46.0	51.7	59.5	48.3	50.4	46.5	52.2	60.0	49.2	50.8	47.1	52.7	60.4
	S.C.	50.4	48.4	37.1	37.4	29.6	51.3	49.4	38.5	38.7	30.5	52.2	50.4	39.8	39.9	31.3
	K.W.	2.9	3.0	2.9	3.0	3.2	3.0	3.0	3.0	3.1	3.2	3.0	3.0	3.0	3.1	3.2
85	T.C.	45.2	47.4	43.5	49.2	56.4	46.0	47.9	44.0	49.6	56.8	46.9	48.4	44.5	50.0	57.2
	S.C.	47.9	46.4	35.9	36.4	28.9	48.8	47.5	37.2	37.6	29.6	49.7	48.6	38.5	38.9	30.2
	K.W.	3.3	3.3	3.3	3.4	3.5	3.3	3.3	3.3	3.4	3.5	3.4	3.4	3.4	3.5	3.6
95	T.C.	42.9	44.9	40.9	46.7	53.3	43.7	45.5	41.5	47.0	53.7	44.5	46.0	41.9	47.3	54.1
	S.C.	45.5	44.4	34.6	35.3	28.1	46.3	45.6	35.9	36.6	28.7	47.1	46.7	37.2	37.9	29.2
	K.W.	3.6	3.6	3.6	3.7	3.8	3.6	3.7	3.6	3.8	3.9	3.7	3.7	3.7	3.8	3.9
105	T.C.	40.4	41.9	39.0	43.3	49.5	41.1	42.4	39.5	43.6	49.8	41.7	42.8	39.9	43.9	50.2
	S.C.	42.8	42.1	33.9	34.0	26.7	43.4	43.0	35.0	35.3	27.3	44.1	43.9	36.1	36.5	27.9
	K.W.	4.2	4.1	4.1	4.2	4.3	4.2	4.2	4.2	4.3	4.4	4.3	4.2	4.2	4.3	4.4
115	T.C.	37.9	39.0	37.2	40.1	45.7	38.4	39.4	37.6	40.4	46.1	38.9	39.8	38.0	40.6	46.3
	S.C.	40.1	39.9	33.2	32.7	25.3	40.6	40.5	34.2	33.9	26.0	41.1	41.1	35.1	35.1	26.7
	K.W.	4.7	4.7	4.7	4.7	4.8	4.8	4.7	4.7	4.8	4.9	4.8	4.8	4.7	4.8	4.9
125	T.C.	35.4	36.1	35.4	36.9	42.0	35.8	36.4	35.7	37.1	42.3	36.2	36.7	36.0	37.3	42.5
	S.C.	37.4	37.7	32.5	31.4	23.9	37.8	38.0	33.3	32.6	24.6	38.1	38.3	34.0	33.8	25.4
	K.W.	5.3	5.2	5.2	5.2	5.3	5.4	5.2	5.2	5.3	5.4	5.4	5.3	5.3	5.3	5.4

NOTE: ALL CAPACITIES ARE NET (KBTUH) WITH INDOOR FAN HEAT ALREADY DEDUCTED AT 1250 BTUH/1000 CFM.

Multipliers for determining the performance with other indoor sections.

NOTE: For dry bulb temperatures different than those listed (between 73-87 F), sensible capacity increases by 1060 BTUH per 1000 CFM per degree above the listed temperature and decreases by 1060 BTUH per 1000 CFM per degree below the listed temperature.

NOTE: KW RATING IS FOR OUTDOOR AND INDOOR UNITS.

HIGH CFM

Air Handler	Coil	T.C.	S.C.	KW
AV/SV48	-	1.00	1.00	1.00
AV/SV60	-	1.00	1.00	1.00
F*FV060	-	1.00	1.00	1.00
MV20D	MC61D	1.00	1.01	0.99

Variable Speed Furnace	Coil	T.C.	S.C.	KW
PV8*C20	FC/PC60C	1.00	1.03	1.02
P(C,V)9*C20	FC/PC60C	0.94	0.92	0.93
PV8*C20	FC/MC/PC60D	1.00	1.03	1.02
P(C,V)9*D20	FC/MC/PC60D	0.94	0.92	0.92
PV8*C20	HC60	1.00	1.03	1.02
P(C,V)9*D20	HC60	0.94	0.92	0.92
PV8*C20	HD60	1.00	1.03	1.02
P(C,V)9*D20	HD60	0.94	0.92	0.92
PV8*C20	MC61D	1.00	1.00	1.00
P(C,V)9*D20	MC61D	0.95	0.92	0.93

COOLING PERFORMANCE DATA - LOW CFM 1-STAGE OPERATION																
OUTDOOR UNIT MODEL NO.		CZE06011														
INDOOR COIL MODEL NO.		MC61D + MV20D														
CONDENSER ENTERING AIR TEMPERATURE	ID CFM	1100					1150					1200				
	ID DB (°F)	80	80	75	80	80	80	80	75	80	80	80	80	75	80	80
	ID WB (°F)	57	62	62	67	72	57	62	62	67	72	57	62	62	67	72
65	T.C.	38.7	40.9	41.4	45.9	50.5	39.4	41.5	41.8	46.3	51.1	40.1	42.2	42.2	46.7	51.7
	S.C.	42.1	38.7	32.0	32.2	25.9	42.8	39.7	32.8	32.8	26.0	43.6	40.8	33.5	33.4	26.1
	K.W.	2.2	2.2	2.1	2.2	2.1	2.2	2.2	2.2	2.2	2.1	2.2	2.2	2.2	2.2	2.2
75	T.C.	37.0	39.1	39.4	43.7	48.1	37.6	39.6	39.8	44.0	48.7	38.2	40.2	40.1	44.4	49.3
	S.C.	40.2	37.2	31.1	31.2	25.0	40.8	38.1	31.8	31.8	25.1	41.5	39.1	32.5	32.3	25.3
	K.W.	2.6	2.6	2.5	2.5	2.5	2.6	2.6	2.6	2.5	2.5	2.6	2.6	2.6	2.6	2.5
85	T.C.	35.2	37.3	37.5	41.5	45.8	35.7	37.7	37.8	41.8	46.3	36.3	38.1	38.1	42.1	46.9
	S.C.	38.3	35.6	30.2	30.2	24.0	38.9	36.5	30.9	30.7	24.3	39.4	37.4	31.5	31.3	24.5
	K.W.	2.9	2.9	2.9	2.9	2.9	3.0	2.9	2.9	2.9	2.9	3.0	2.9	3.0	2.9	2.9
95	T.C.	33.5	35.5	35.5	39.2	43.4	33.9	35.8	35.7	39.5	44.0	34.3	36.1	36.0	39.8	44.5
	S.C.	36.5	34.1	29.4	29.1	23.0	36.9	35.0	30.0	29.7	23.4	37.3	35.8	30.5	30.3	23.7
	K.W.	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
105	T.C.	31.6	32.9	33.0	36.5	40.6	32.1	33.3	33.2	36.8	40.9	32.5	33.6	33.5	37.1	41.3
	S.C.	34.5	32.1	28.2	28.0	22.0	34.9	32.8	28.7	28.6	22.3	35.3	33.6	29.3	29.1	22.6
	K.W.	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.9	3.8	3.9	3.8	3.8
115	T.C.	29.8	30.5	30.6	33.9	37.8	30.3	30.8	30.8	34.2	38.0	30.8	31.1	31.0	34.4	38.2
	S.C.	32.5	30.2	27.1	26.9	20.9	33.0	30.8	27.6	27.5	21.2	33.4	31.4	28.0	28.1	21.6
	K.W.	4.4	4.3	4.3	4.3	4.3	4.4	4.3	4.3	4.3	4.3	4.4	4.3	4.3	4.3	4.3
125	T.C.	28.0	28.0	28.2	31.3	35.0	28.5	28.3	28.3	31.5	35.1	29.0	28.6	28.4	31.8	35.1
	S.C.	30.6	28.2	26.0	25.8	19.9	31.1	28.7	26.4	26.4	20.2	31.6	29.3	26.8	27.0	20.5
	K.W.	4.9	4.8	4.8	4.8	4.8	4.9	4.8	4.8	4.8	4.8	4.9	4.8	4.8	4.8	4.8

NOTE: ALL CAPACITIES ARE NET (KBTUH) WITH INDOOR FAN HEAT ALREADY DEDUCTED AT 1250 BTUH/1000 CFM.

Multipliers for determining the performance with other indoor sections.

NOTE: For dry bulb temperatures different than those listed (between 73-87 F), sensible capacity increases by 1060 BTUH per 1000 CFM per degree above the listed temperature and decreases by 1060 BTUH per 1000 CFM per degree below the listed temperature.

NOTE: KW RATING IS FOR OUTDOOR AND INDOOR UNITS.

LOW CFM

Air Handler	Coil	T.C.	S.C.	KW
AV/SV60	-	1.00	0.99	1.00
F*FV060	-	1.00	0.99	1.00
MV20D	FC/MC60D	0.99	0.99	0.99

Variable Speed Furnace	Coil	T.C.	S.C.	KW
PV8*C20	FC/PC60C	0.99	0.97	1.01
P(C,V)9*D20	FC/PC60C	0.98	0.97	0.99
PV8*C20	FC/MC/PC60D	0.99	0.97	1.01
P(C,V)9*D20	FC/MC/PC60D	0.98	0.97	0.99
PV8*C20	MC61D	0.99	0.98	0.99
P(C,V)9*D20F	MC61D	0.99	0.98	0.99
P(C,V)9*D20	HC60	0.98	0.97	1.00
PV8*C20	HD60	0.99	0.97	1.01
P(C,V)9*D20	HD60	0.99	0.97	1.01

COOLING PERFORMANCE DATA - HIGH CFM 2-STAGE OPERATION																
OUTDOOR UNIT MODEL NO.		CZE06011														
INDOOR COIL MODEL NO.		MC61D + MV20D														
CONDENSER ENTERING AIR TEMPERATURE	ID CFM	1750					1850					1950				
	ID DB (°F)	80	80	75	80	80	80	80	75	80	80	80	80	75	80	80
	ID WB (°F)	57	62	62	67	72	57	62	62	67	72	57	62	62	67	72
65	T.C.	53.8	58.0	57.9	64.1	68.1	54.8	58.2	58.5	64.2	68.1	55.7	58.3	59.0	64.3	68.2
	S.C.	58.7	54.4	46.0	46.2	33.8	59.7	55.6	47.0	46.8	34.6	60.6	56.8	48.0	47.4	35.3
	K.W.	3.5	3.5	3.5	3.6	3.7	3.5	3.6	3.6	3.7	3.8	3.6	3.6	3.7	3.8	3.8
75	T.C.	51.8	55.2	55.5	61.1	65.7	52.6	55.5	55.8	61.3	65.9	53.4	55.9	56.1	61.5	66.1
	S.C.	56.4	52.9	44.9	44.7	33.4	57.3	54.2	45.8	45.4	34.1	58.1	55.5	46.7	46.2	34.7
	K.W.	3.9	4.0	4.0	4.1	4.2	4.0	4.0	4.0	4.1	4.2	4.1	4.1	4.1	4.2	4.3
85	T.C.	49.8	52.3	53.0	58.0	63.4	50.5	52.9	53.2	58.4	63.7	51.2	53.4	53.3	58.7	64.0
	S.C.	54.1	51.4	43.7	43.1	33.0	54.9	52.9	44.6	44.1	33.5	55.6	54.3	45.4	45.0	34.1
	K.W.	4.4	4.4	4.4	4.5	4.6	4.4	4.5	4.5	4.6	4.7	4.5	4.6	4.5	4.7	4.8
95	T.C.	47.7	49.5	50.5	55.0	61.1	48.4	50.2	50.5	55.5	61.5	48.9	51.0	50.5	56.0	62.0
	S.C.	51.9	49.9	42.5	41.6	32.6	52.5	51.5	43.3	42.7	33.0	53.1	53.0	44.1	43.7	33.4
	K.W.	4.8	4.9	4.9	5.0	5.1	4.9	4.9	4.9	5.0	5.2	5.0	5.0	5.0	5.1	5.3
105	T.C.	45.2	46.6	47.2	51.7	57.2	45.7	47.1	47.3	52.1	57.6	46.3	47.6	47.3	52.4	58.0
	S.C.	49.1	47.7	40.9	40.3	31.2	49.7	48.9	41.7	41.3	31.6	50.2	50.2	42.6	42.2	32.1
	K.W.	5.5	5.5	5.5	5.6	5.8	5.5	5.6	5.6	5.7	5.8	5.6	5.6	5.6	5.7	5.9
115	T.C.	42.7	43.8	44.0	48.5	53.5	43.2	44.1	44.2	48.7	53.9	43.7	44.4	44.3	49.0	54.2
	S.C.	46.4	45.5	39.3	39.1	29.8	46.9	46.5	40.2	40.0	30.3	47.4	47.5	41.1	40.8	30.8
	K.W.	6.1	6.2	6.1	6.2	6.4	6.2	6.2	6.2	6.3	6.4	6.3	6.3	6.2	6.4	6.5
125	T.C.	40.2	41.0	40.8	45.3	49.8	40.7	41.1	41.0	45.4	50.1	41.1	41.2	41.3	45.5	50.4
	S.C.	43.7	43.3	37.7	37.8	28.4	44.2	44.0	38.7	38.6	28.9	44.7	44.8	39.7	39.3	29.5
	K.W.	6.8	6.8	6.7	6.9	7.0	6.8	6.8	6.8	6.9	7.0	6.9	6.9	6.9	7.0	7.1

NOTE: ALL CAPACITIES ARE NET (KBTUH) WITH INDOOR FAN HEAT ALREADY DEDUCTED AT 1250 BTUH/1000 CFM.

Multipliers for determining the performance with other indoor sections.

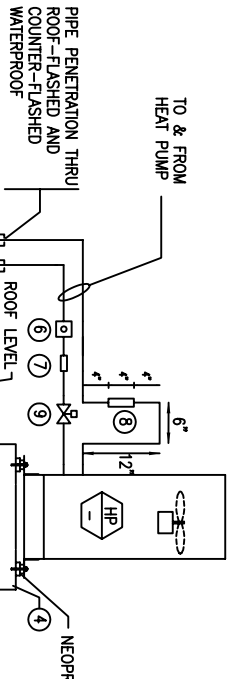
NOTE: For dry bulb temperatures different than those listed (between 73-87 F), sensible capacity increases by 1060 BTUH per 1000 CFM per degree above the listed temperature and decreases by 1060 BTUH per 1000 CFM per degree below the listed temperature.

NOTE: KW RATING IS FOR OUTDOOR AND INDOOR UNITS.

HIGH CFM

Air Handler	Coil	T.C.	S.C.	KW
AV/SV60	-	1.00	0.99	1.00
F*FV060	-	1.00	0.99	1.00
MV20D	FC/MC60D	0.99	0.99	0.99

Variable Speed Furnace	Coil	T.C.	S.C.	KW
PV8*C20	FC/PC60C	0.99	0.99	1.01
P(C,V)9*D20	FC/PC60C	0.98	0.90	0.99
PV8*C20	FC/MC/PC60D	0.99	0.99	1.01
P(C,V)9*D20	FC/MC/PC60D	0.98	0.90	0.99
PV8*C20	MC61D	0.99	0.91	0.99
P(C,V)9*D20	MC61D	0.99	0.91	0.99
P(C,V)9*D20	HC60	0.98	0.90	1.00
PV8*C20	HD60	0.99	0.99	1.01
P(C,V)9*D20	HD60	0.99	0.99	1.01

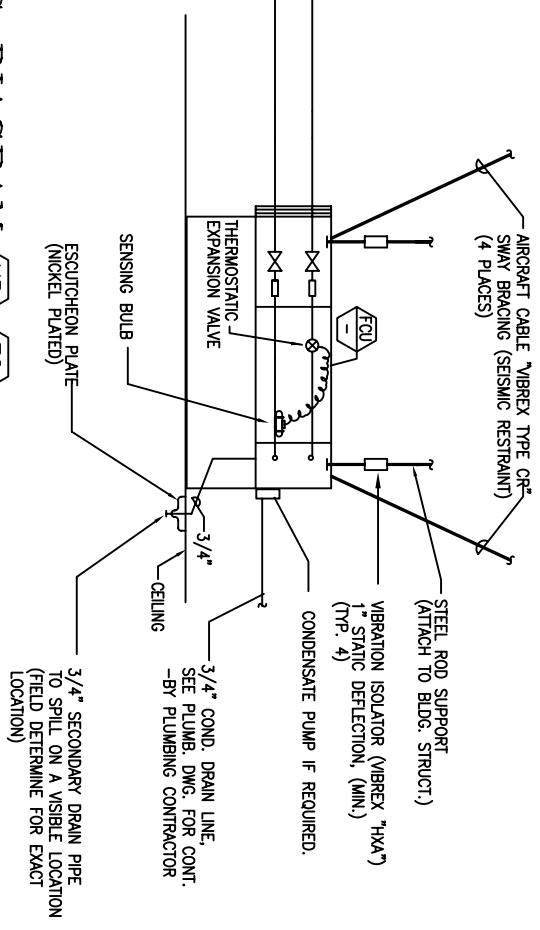


- NOTES:
1. FAN COIL UNITS SHALL BE LOCATED SUCH THAT UNIT CAN BE SERVICED AND REMOVED WITHOUT REMOVAL OF PERMANENT CONSTRUCTION.
 2. INSULATE REFRIGERANT SUCTION LINES.
 3. INSTALL PIPES IN STUD WALL WITH VIBRATION ISOLATION PIPE SUPPORT.
 4. 6" HIGH EQUIPMENT PLATFORM
 5. INSTALL REFRIGERANT PIPING PER MANUFACTURER'S INSTALLATION RECOMMENDATION
 6. FIELD INSTALLED SIGHT GLASS
 7. FIELD INSTALLED FILTER DRIER
 8. FIELD INSTALLED WUFLER (LOCATED IN A VERTICAL POSITION)
 9. FIELD INSTALLED SOLENOID VALVE

SPLIT DX HP REFRIGERANT PIPING DIAGRAM



SCALE: NOT TO SCALE



R-410a Refrigerant lines and the losses												
Unit Nominal Size	Liquid Line is 3/8" Vapor Line Diameters (In. O.D.)	Cooling Capacity Loss (%) Total Equivalent Line Length (ft)										
		25'	50'	80'	100'	125'	150'	175'	200'	225'	250'	
Equivalent length. Requires Accessories												
1.5 Ton	1/2	1	2	3	4	6	7	8	9	10	12	
	5/8	0	0	1	1	1	2	2	3	3	3	
2 Tons	5/8	0	1	1	2	3	3	4	4	5	6	
	3/4	0	0	0	0	1	1	1	1	1	2	
2.5 Tons	7/8	0	0	0	0	0	0	0	0	0	1	
	5/8	1	2	3	3	4	5	6	7	8	9	
3 tons	3/4	0	0	1	1	1	2	2	2	3	3	
	7/8	0	0	0	0	1	1	1	1	1	1	
3.5 Tons	3/4	0	1	2	2	3	4	4	5	6	6	
	7/8	0	0	1	1	1	2	2	2	3	3	
4 Tons	1--1/8	0	0	0	0	0	0	0	0	0	1	
	3/4	0	1	2	3	4	5	5	6	7	8	
5 Tons	7/8	0	0	1	1	2	2	2	3	3	4	
	1--1/8	0	2	4	5	6	7	9	10	11	12	
		0	1	2	2	3	4	4	5	5	6	
		0	0	0	1	1	1	1	1	1	2	

Required Accessories are Solenoid valve, crankcase heater, star capacitor, hard shut off TXV, filter drier.

VENSTAR®

COMMERCIAL THERMOSTAT

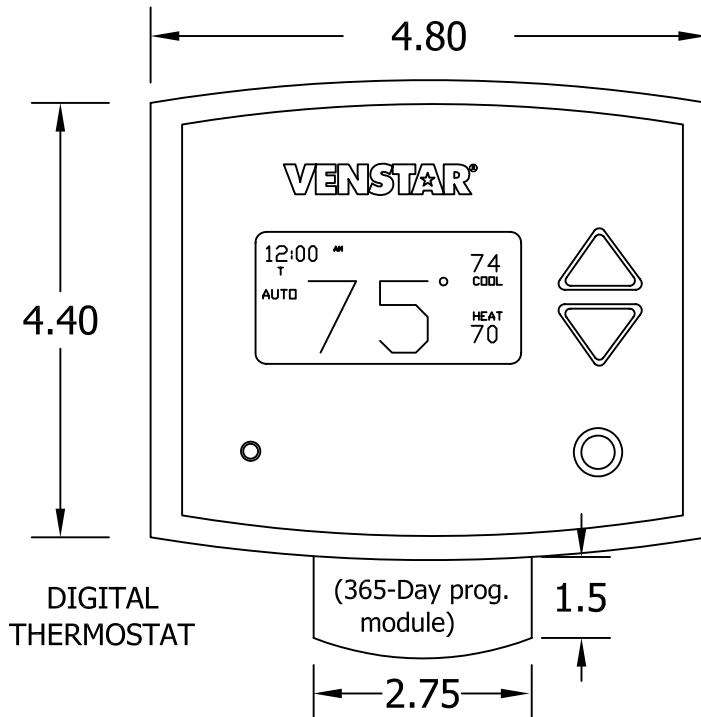
MODEL NO. **T2950**

365-DAY PROGRAMMABLE

UP TO 3-HEAT
& 2-COOL

HEAT
COOL & HEAT
PUMP

TITLE-24 COMPLIANT

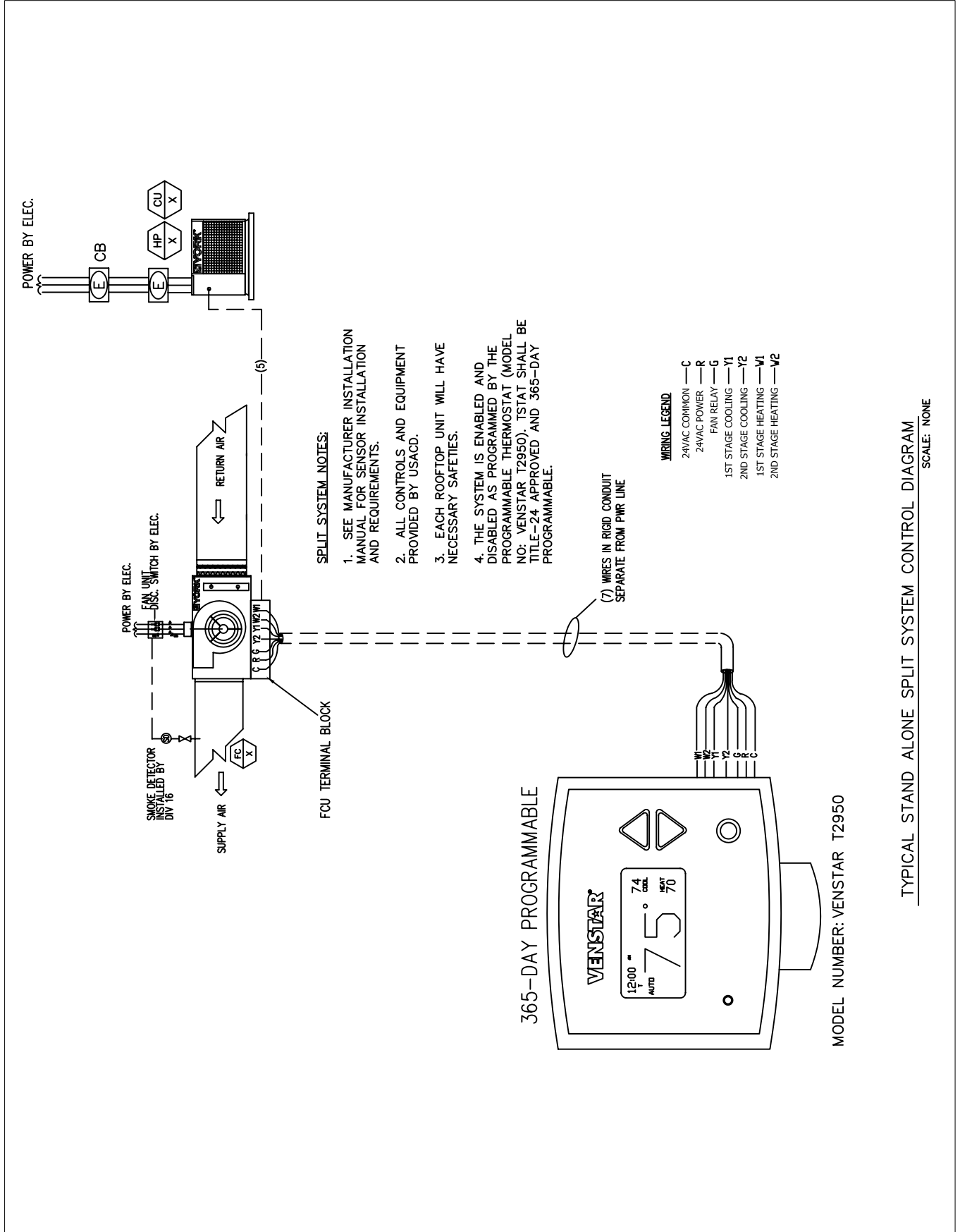


STANDARD FEATURES:

- **365-day programmable (up to 10 years, includes full calendar with preprogrammed holidays)**
- Up to 3-Occupied, 1-Unoccupied periods per day, with copy command for easy programming
- **Light Activated occupied period (defeatable)**
- **Auto changeover, 3-stage heat, 2-stage cool for use with gas/electric, heat pump, split systems, electric & hydronic heat**
- Configurable for manual changeover, also configurable programmable or non-programmable
- Adjustable deadbands and timers
- 2 configurable outputs for maximum flexibility. Can be used for humidification, dehumidification, 3rd stage heating or programmable output for lighting, exhaust fans, remote sensor etc.
- Energy Watch keeps track of energy use by tracking heating and cooling hours
- Smart Fan (keeps the fan from running during unoccupied periods)
- Smart recovery (reaches selected comfort temperature at exact time is scheduled for energy savings)
- **Pre-occupancy fan purge**
- Display shows both heating and cooling setpoints and room temperature simultaneously
- All programming and setpoints stored in non-volatile memory, and are never lost in power failure
- Service filter and service UV lamp indicators
- Red/Green LED shows whether thermostat is calling for heating or cooling
- **5-minute compressor time guard and adjustable cycle limit, both defeatable for servicing equipment**
- Thermoglow backlit electro-luminous display and backlit color coded keys and legends

ACCESORY FEATURES:

- **Accepts humidification/dehumidification control module (Venstar part number ACC0430)**
- **Control to, or monitor a second remote sensor. Can average up to 8 (wired or wireless) remote sensors (Venstar part number ACC0401)**
- Outdoor sensor ready with high and low temperature of the day (Venstar part number ACC0400)
- Accepts accessory IR remote control system (Venstar part number ACC0431)
- Accepts accessory EZ Programmer- programmed via USB through computer (Venstar part number ACC0)
- **For accessory locking cover use (Venstar part number ACC0620)**



COMMERCIAL ZONING PACKAGE

FACILITY EXPLORER

BY JOHNSON CONTROLS

The Facility Explorer Commercial Zoning Package is a complete, turnkey control system used to improve occupant comfort in a building (or section of a building) that is conditioned with a packaged rooftop HVAC unit. It accomplishes this by varying the amount of conditioned air delivered to individual zones and by intelligently cycling the rooftop unit's heating and cooling stages to best satisfy all the zone demands.

Manufacturer Independent

The Facility Explorer Commercial Zoning Package is designed to work with any standard, packaged HVAC equipment, regardless of manufacturer. This allows you to apply this control package to equipment provided by a variety of suppliers or to equipment that has already been installed. This flexibility makes the Facility Explorer Commercial Zoning Package perfectly suited for both new and retrofit installations.

Affordable Intelligence

The Facility Explorer Commercial Zoning Package utilizes the distributed application architecture of the FX16 Master Controller. This feature allows direct communications to occur between the FX16 and all the zone controllers. This means that there is no need for a traditional supervisory class controller to manage the data sharing. This direct communication flow allows the FX16 to monitor each zone's status to intelligently determine the proper mode of operation for the rooftop unit.

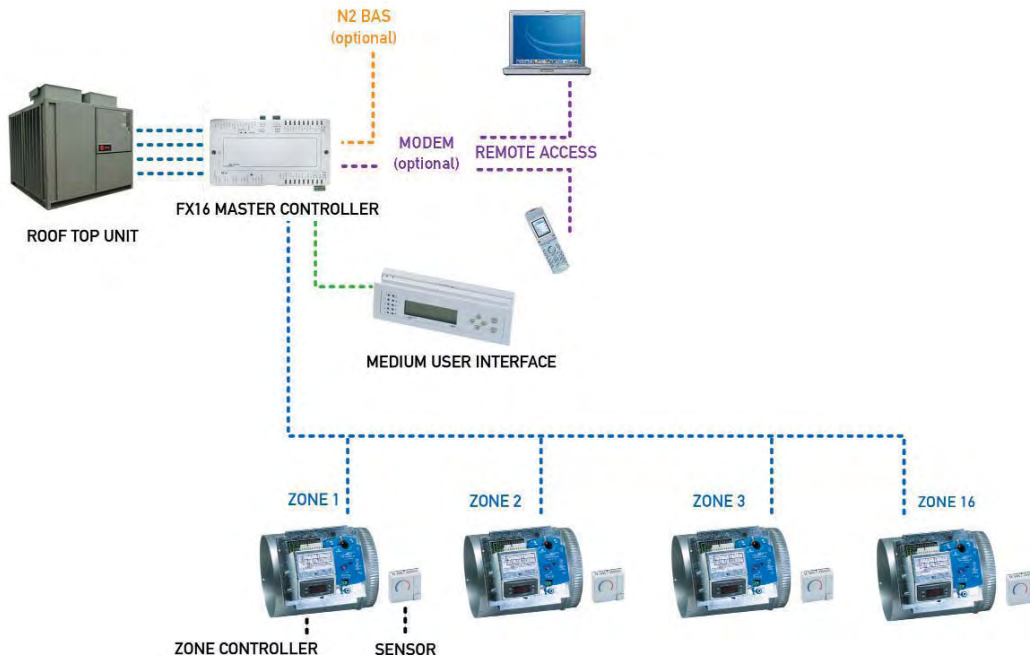


Easy Installation

Several pieces of the Facility Explorer Commercial Zoning Package can be ordered pre-assembled from the factory to simplify installation:

- Zone Controller and Actuator Assembly (FXZAN)
 - The FX05 Field Controller is combined with an M9104AGA non-spring return actuator and an electrical termination wiring block, all in one packaged assembly
 - Perfect for retrofit installations where the zone damper is already installed
- Zone Controller, Actuator, and Damper Assembly
 - FXZAN Zone Controller and Actuator Assembly is combined with a round or rectangular zone damper
 - Perfect for new installations or for retrofit installations where the zone damper has not yet been installed

- Bypass Damper and Actuator Assembly
 - A round or rectangular bypass damper is combined with an M910xHGA non-spring return actuator
- FX16 Master Controller with Pre-Downloaded Zoning Application
 - FX16 Master Controller can be ordered with the commercial zoning application pre-downloaded
 - Once installed, the FX16 takes care of downloading the corresponding parts of the zoning application to each of the zone controllers
 - Eliminates the downloading steps from the field installation and startup
 - This provides the possibility (with an onsite Medium User Interface) to download, configure and commission the entire system, including the rooftop, bypass, and all zone controllers without any software tool



TSS – Single Duct Variable Air Volume Terminal



- An integrated VAV box with direct digital controls eliminates the coordination and difficulties associated with factory mounting
- Downloading of software, setting of parameters, addressing and testing at the factory reduces startup time and lowers risk
- Superior flow measuring provides for lower minimum cubic feet per minute (CFM) values, which reduces energy costs and noise while maintaining comforts in the zone
- Installation time can be reduced with the low profile compact design and standard metal hanging straps
- Units wired in compliance with all applicable National Electrical Code (NEC) requirements and tested in accordance with Air Conditioning and Refrigeration Institute (ARI) standard 880
- Offers damper stall detection, starved box detection, actuator motor duty cycle, VAV box flow test, and other diagnostics on most models (VMA Series)

TSS Terminals provide Variable Air Volume (VAV) control beyond the typical single duct box. They are specifically designed for precise air delivery throughout the entire operating range, regardless of the installed inlet conditions. These units can be ordered with or without a Direct Digital Controller (DDC), which can operate as a stand-alone unit, on a Johnson Controls N2 trunk, or on a LON® trunk.

TSS Terminals take advantage of typical benefits provided by single duct units, while performing at extremely low sound levels. This is critical in today's buildings where occupants are placing more emphasis on indoor acoustics. The TSS Terminal is manufactured and assembled with a multi-point, center-averaging airflow sensor, which provides a signal to the controller enabling it to quietly and precisely measure airflow.

Bundled with the TSS Terminal is a digital controller from the VAV Modular Assembly (VMA) Series or the LN Series. Each model in the VMA1400 Series and the LN Series combines a controller, pressure sensor, and actuator housed in one pre-assembled unit.

Standard Features

Construction

- ARI 880 certified and labeled
- 22-gauge galvanized steel casing and valve
- G90 galvanized steel
- 1/2", 4lb/ft³ skin, dual density fiberglass insulation, glued and clinch-pinned in place

Hot Water Coils

- ARI 410 certified and labeled
- 1-, 2-, 3-, 4-row coils
- Tested at a minimum of 350 psig under water
- Mechanically expanded copper tubes leak tested to 350 psig air pressure
- Male sweat type water connections

Primary Air Valve

- Embossed rigidity rings
- Low-thermal conducting damper shaft with position indicator
- Mechanical stops for open and closed position
- Multi-point center-averaging airflow sensor
- Brass balancing tees
- Plenum-rated sensor tubing

Electrical Components

- cETL listed for safety compliance
- National Electrical Manufacturers Association (NEMA) Type 1 wiring enclosure

Electric Heat

- ETL listed as an assembly for safety compliance
- Integral electric heat assembly
- Automatic reset primary and back-up secondary thermal limits
- Single-point power connection
- Hinged electrical enclosure
- Fusing per NEC
- Airflow switch
- Ni-chrome elements
- Primary/Secondary power terminations
- Wiring diagram

Optional Features

Construction

- 20-gauge galvanized steel construction
- 3/4" or 1" fiberglass insulation
- Scrim-reinforced, foil-faced insulation meeting American Society for Testing and Materials (ASTM) C1136 for mold, mildew, and humidity resistance
- 1/2" Elastomeric closed-cell foam insulation
- Double wall construction with 22-gauge liner
- Mounting brackets to accept all-thread hanging rods or wire hangers
- Low temperature construction for use in thermal storage applications, including a thermally isolated primary air inlet and a composite damper shaft

Hot Water Coils

- Low pressure steam coils
- Multi-circuit coils for reduced water pressure drop
- Opposite hand water connections
- Bottom and top access plates for cleaning

Electrical Components

- Full unit toggle disconnect and inline motor fusing
- Primary and secondary transformer fusing

Electric Heat

- Proportional solid state relay (SSR) heater control
- Mercury contactors
- Door interlocking disconnect switches
- Disconnect (toggle or door interlocking)
- Pneumatic Electric (PE) switches
- Mercury and magnetic contactors
- Manual reset secondary limit
- 24 volt control transformer
- Special watt densities
- Finned tubular elements

Controls

- Factory-provided controls
- Direct digital controls (DDC) for N2 or LON® networks
- Pneumatic controls

TSL – Single Duct Low Height Variable Air Volume Terminal



- An integrated VAV box with direct digital controls eliminates the coordination and difficulties associated with factory mounting
- Downloading of software, setting of parameters, addressing and testing at the factory reduces startup time and lowers risk
- Superior flow measuring provides for lower minimum cubic feet per minute (CFM) values, which reduces energy costs and noise while maintaining comforts in the zone
- Installation time can be reduced with the low profile compact design and standard metal hanging straps
- Units wired in compliance with all applicable National Electrical Code (NEC) requirements and tested in accordance with Air Conditioning and Refrigeration Institute (ARI) standard 880

TSL Terminals provide variable air volume (VAV) control beyond the typical single duct box. They are specifically designed for precise air delivery throughout the entire operating range and are only 10" in height, making them ideal for shallow or congested ceiling plenum applications. These units can be ordered with or without a Direct Digital Controller (DDC), which can operate as a stand-alone unit, on a Johnson Controls N2 trunk, or on a LON® trunk.

TSL Terminals take advantage of typical benefits provided by single duct units, while performing at extremely low sound levels. This is critical in today's buildings where occupants are placing more emphasis on indoor acoustics. The TSS Terminal is manufactured and assembled with a multi-point, center-averaging airflow sensor, which provides a signal to the controller enabling it to quietly and precisely measure airflow.

Bundled with the TSL Terminal is a digital controller from the VAV Modular Assembly (VMA) Series or the LN Series. Each model in the VMA1400 Series and the LN Series combines a controller, pressure sensor, and actuator housed in one pre-assembled unit.

Standard Features

Construction

- ARI 880 certified and labeled
- 20-gauge, galvanized steel casing and valve
- G90 galvanized steel construction
- 1/2", 4 lb/ft³ skin, dual density fiberglass insulation glued and clinch pinned
- Invertible unit facilitates control installation on the left- or right-hand side

Hot Water Coils

- ARI 410 certified and labeled
- 1-, 2-, 3-, 4-row coils
- Left- or right-hand connections
- Tested at a minimum of 450 psig under water and rated at 300 psig working pressure at 200°F
- Aluminum fin construction with die-formed spacer collars for uniform spacing
- Mechanically expanded copper tubes leak tested to 450 psig air pressure and rated at 300 psig working pressure at 200°F
- Male sweat type water connections

Primary Air Valve

- 18-gauge, G90 galvanized steel construction
- Low thermal conductance damper shaft
- Position indicator on external end of damper shaft
- Mechanical stops for open and closed position
- Multi-point center-averaging airflow sensor
- Brass balancing tees
- Plenum-rated sensor tubing

Electrical Components

- cETL listed for safety compliance with Underwriters Laboratories Inc.® (UL) 1995
- National Electrical Manufacturers Association (NEMA) Type 1 wiring enclosure

Electric Heat

- Invertible unit facilitates control installation on the left- or right-hand side (not applicable if equipped with a mercury contactor)
- cETL listed as an assembly for safety compliance
- Automatic reset primary and back-up secondary thermal limits
- Primary auto-reset high limit

- Secondary high limit
- Airflow switch
- Single-point power connection
- Hinged electrical enclosure door
- Fusing per NEC

Optional Features

Construction

- Scrim-reinforced, foil-faced insulation meeting American Society for Testing and Materials (ASTM) C1136 for mold, mildew, and humidity resistance
- 1/2" Elastomeric closed-cell foam insulation
- Double wall construction with a 22-gauge liner
- Mounting brackets to accept all thread hanging rods or wire hangers
- Discharge sound attenuator (Model TSL-SA)

Hot Water Coil

- Coil access plate for cleaning coil
- Coil circuiting options for reduced water pressure drop
- Right- or left-hand water connections
- Bottom and top access plates for cleaning
- Steam coils

Electrical Components

- Toggle disconnect switch
- Primary and secondary transformer fusing

Electric Heat

- Proportional solid state relay (SSR) heater control
- Mercury contactors (if equipped with a mercury contactor, the unit cannot be inverted)
- Door interlocking disconnect switches
- Disconnect (toggle or door interlocking)
- Pneumatic Electric (PE) switches
- Mercury and magnetic contactors
- Manual reset secondary limit

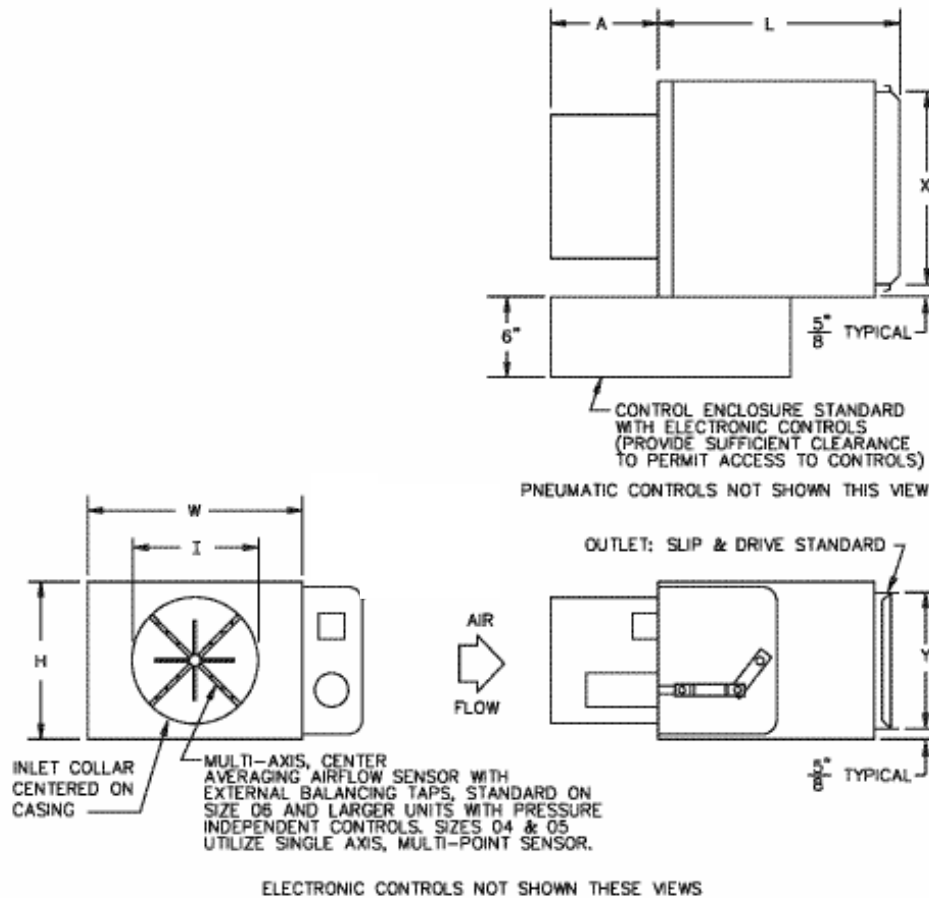
Controls

- Factory-provided controls
- Direct Digital Controls (DDC), for N2 or LON® networks
- Pneumatic controls

Single Duct Variable Air Volume Terminal (Model TSS)

Unit Size	CFM	Bypass CFM	Weight	Dimensions				
				W x H x L	A	I	X	Y
6	200	300	18	10" x 10" x 11"	6 1/2"	5 7/8"	8 3/4"	8 3/4"
8	400	600	20	12" x 10" x 11"	6 1/2"	7 7/8"	10 3/4"	8 3/4"
10	600	900	25	14" x 12.5" x 13"	6 1/2"	9 7/8"	12 3/4"	11 1/4"
12	800	1200	30	16" x 15" x 13"	6 1/2"	11 7/8"	14 3/4"	13 3/4"
14	1100	1800	38	20" x 17.5" x 17.5"	6 1/2"	13 7/8"	18 3/4"	16 1/4"
16	1500	2200	42	24" x 17.5" x 17.5"	6 1/2"	15 7/8"	22 3/4"	16 1/4"
22	3000	5400	72	34" x 17.5" x 11"	8"	32 1/4" x 15 7/8"	32 3/4"	16 1/4"

Note: All dimensions are in inches with a tolerance of +1/8". Size 22 has a rectangular inlet collar. CFM based on 1000 FPM (Bypass 1500 FPM) for low to medium pressure applications.



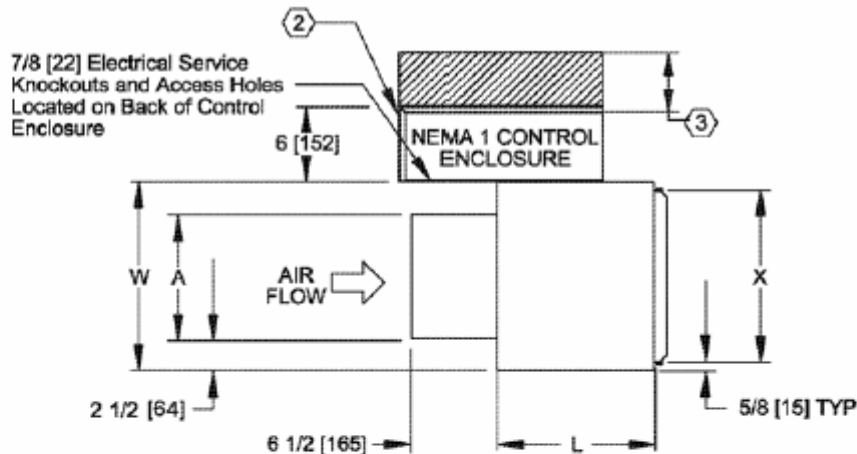
Clearance 24"

Dimensions – Model TSS

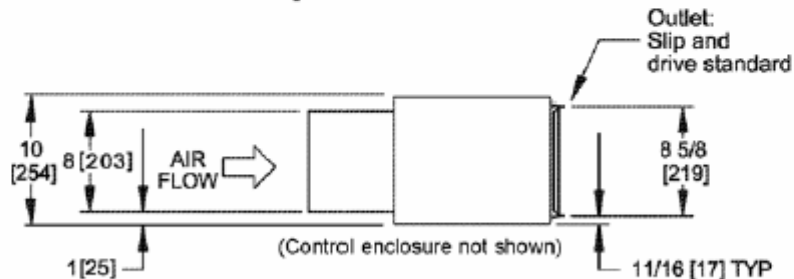
Single Duct Variable Air Volume Terminal - Rectangular (Model TSL)

Unit Size	CFM	Bypass CFM	Dimensions				Weight
			A	W	L	X	
10	600	1200	10"	15"	12 1/2"	13 3/4"	26
12	800	1600	14"	19"	12 1/2"	17 3/4"	28
14	1200	2200	20"	25"	16 1/2"	23 3/4"	39
16	1500	3000	26"	31"	16 1/2"	29 3/4"	45

Notes: 1. For dimensional data for unit sizes 6 and 8, refer to the Single Duct Variable Air Volume Terminal (Model TSS). All dimensions are in inches with a tolerance of +1/8". Weights are in pounds. Weights are for the basic unit with the indicated option and control enclosure. Actual weight varies based on project-specific requirements for unit options, appurtenances, and controls. 2. Control enclosure is standard with factory-mounted electronic controls. 3. Check all national and local codes for required clearances.

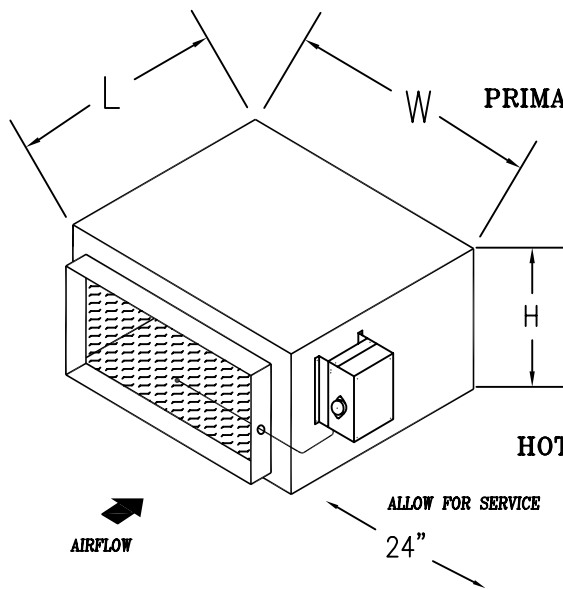


Top View



Side View

Dimensions – Model TSL



CASING: Minimum 22 gauge galvanized steel reinforced for maximum rigidity and minimum leakage. Units complete with a minimum of 1 inch to 1 1/2 inch density insulation in accordance with NFPR-90

PRIMARY AIR VALVE: Constructed of welded steel channel frame with 18 gauge galvanized steel blades, die formed stiffeners are full blade stop. Stainless steel side seals standard along with blade seals to minimize leakage. All hardware is zinc plated with brass pivot points and bronze oilite bearings.

ACTUATOR: Electronic, manufactured by JCI (FX SERIES),

HOT WATER COIL: Add 4 1/2 inches to airway length for 1 or 2 rows, 1/2 inch SW connection.

NOTES: 1. Dampers may be mounted in any position.
2. Bypass dampers are sized for 100% bypass relief. (see bypass damper selection chart)

35PSA ZONE/BYPASS DAMPER							
MODEL NUMBER	ZONE CFM	BYPASS CFM	INLET + 1/4"	H	W	L	(lbs)
PSA-06-006	600	1000	10 X 9	12	11	13	17
PSA-08-010	1000	2000	16 X 10	12	18	13	23
PSA-10-016	1000	2000	16 X 10	12	18	13	23
PSA-12-022	1500	2500	16 X 10	12	18	13	23
PSA-14-028	2000	4000	29 X 10	12	31	13	38
PSA-16-035	2000	4000	29 X 10	12	31	13	38
PSA-18-050	3000	6000	26 X 16	18	28	22	45
PSA-20-065	4000	8000	32 X 16	18	34	22	51
PSA-24-100	5000	10000	40 X 16	18	42	22	63

- *ZONE CFM BASED ON 1000 FPM
- *BYPASS CFM BASED ON 2000 FPM
- SIZE TO 100% OF UNIT AIRFLOW (MANF. RECOMMENDED)
- *PROVIDED BY USACD-YORK

ADDITIONAL DAMPER
SPECIFICATIONS – 35PSA (RECTANGULAR)

SCALE: NONE

STERIL-AIRE®

UVC for HVAC™

Model SE Series UVC Emitters™

Single-Ended, Very High
Output Germicidal Light
Source for HVAC Systems

needed to maintain microbial control. The UVC Emitter, by contrast, has a 12-month service life – and even after a full year, it has 2-1/2 times greater output than competitive devices deliver on Day 1! As a result, only Steril-Aire can ensure the germicidal performance you need, with no return of microbial growth, for 3-4 times longer than the competition.



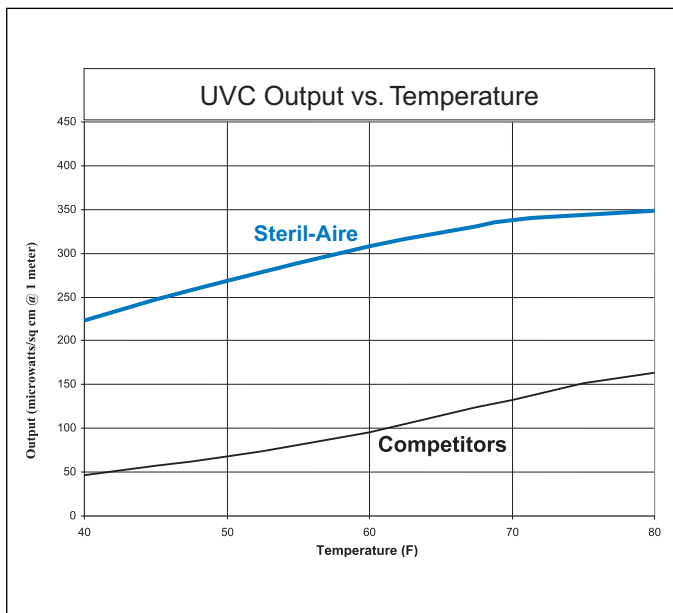
Applications

Steril-Aire Single-Ended (SE Series) fixtures install from the exterior of HVAC equipment, making them ideal for germicidal sites that are difficult to access. They are easily installed by making a one-inch hole in the equipment wall and/or duct, and then simply mounting the fixture to the unit exterior. Only the lamp or tube penetrates into the system, while the power supply remains external. Choose from six tube lengths (16", 20", 24", 30", 36" and 42") and four voltage options (115, 208, 230 or 277 Vac) to fit most applications, including:

- Fan coils, heat pumps, unit ventilators, terminal units and ductwork.

Benefits

- Kills or inactivates surface and airborne microorganisms that contribute to poor IAQ and/or the spread of infectious disease, including: mold and mold spores, bacteria (*including TB, Legionella, E. coli, Listeria, salmonella and whooping cough*); and viruses (*including colds, flu, measles*).
- Delivers an average of 5 times the output of competitive UVC products at HVAC operating temperatures, for 3-4 times longer life and more reliable germicidal control.
- Uses patented state-of-the-art solid-state electronic power supply for enhanced reliability and performance.
- Continuously cleans coils, drain pans, plenums and ducts, eliminating costly cleaning programs and the use of harmful chemicals and disinfectants.
- Lowers HVAC energy costs by restoring heat transfer and net cooling capacity.
- Produces no ozone or other secondary contaminants – will not harm building occupants, equipment or furnishings.
- Offers lowest life-cycle cost of any UVC product. Return on investment is often less than one year.
- Installs quickly and easily, with no need to open equipment – ideal for small systems and/or ducts.



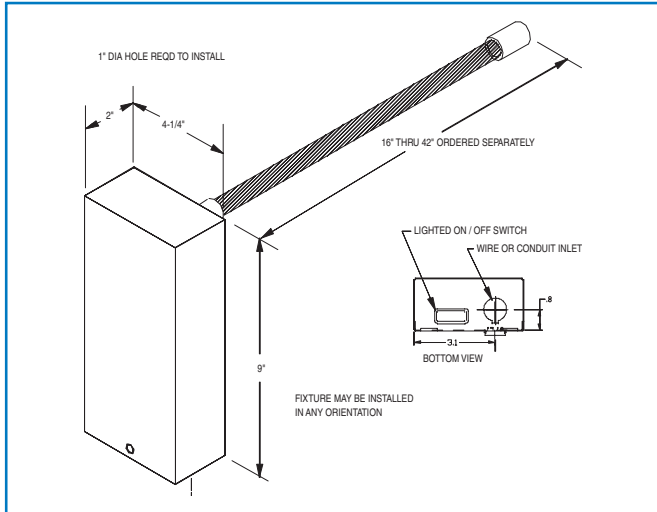
Steril-Aire's multi-patented UVC Emitter™ provides the best and longest-lasting UVC performance available. As shown in the comparison graph (*above*), it has been independently tested to deliver an average of 5 times the output of other ultraviolet devices under HVAC operating conditions (45° F @ 550 fpm air velocity).

Competitive UVC lights must be changed every 3-4 months because they quickly lose the output or "killing power"

Model SE Specifications

The UVC Emitter™ and fixture shall be factory assembled and tested. They shall consist of a housing, power source, Emitter socket and Emitter.

The housing shall be constructed of 304 stainless steel to withstand HVAC environments and shall be equipped with a 1/2" electrical conduit opening to facilitate wiring. All components shall be



This product may be covered by one or more of the following patents, others pending: 5,334,347/ 5,866,076/ 5,817,276/ 6,372,186/ 6,313,470/ 6,245,293/ 6,267,924/ 6,280,686/ 6,423,882.

incorporated into one integral assembly that maximizes serviceability. It shall be designed for mounting from outside the airstream with only the Emitter in the conditioned air. Emitter shall be held in place and supported in the airstream by a patented integral collar, o-ring and heavy-duty spring wire fastener. The housing shall include an on-off switch and an indicator light to verify unit function.

The power supply shall be a Class P2, electronic rapid start type with a power factor of >0.95 and a power conversion of >75%. It shall be available in 115-208/230 or 277 Vac, 50/60 Hertz, and single phase. It shall be designed to maximize photon production, irradiance and reliability in cold or moving airstreams of 35-170° F, 100% RH and up to 2000 fpm. The design shall include RF and EMI suppression.

The socket shall be a Circline® 4 pin type with sufficient wire length to facilitate service.

The Emitter shall be a very high output, hot cathode, T5 diameter, Circline® cell-base type that produces a UVC band of 250-260 nm. Each tube shall be capable of producing the specified output at up to 2000 fpm velocity and temperatures of 35-170° F. It shall produce no ozone or other secondary contaminants.

Independent testing: The unit shall be tested by an independent test laboratory in accordance with the general provisions of IES Lighting Handbook, 1981 Applications Volume, and shall be verified through independent testing to provide output per 1" arc length of not less than 10 µW/cm² at 1 meter in a 400 fpm airstream of 45° F.

Unit shall comply with UL Standard 1995 for use in HVAC equipment and shall carry the "UL" and "ULC" labels.

Ordering Information

Model No.	Part No.	Description	Length	Electrical	Weight
SE 1 VO	11001900	Single-Ended Fixture	N/A	115, 208, 230V: 70-85 watts	3.0 lb.
SE 1 VO	11002100	Single-Ended Fixture	N/A	277V: 70-85 watts	3.0 lb.
GTS 16 VO	21000100	UVC Emitter	16"	N/A	0.15 lb.
GTS 20 VO	21000200	UVC Emitter	20"	N/A	0.15 lb.
GTS 24 VO	21000300	UVC Emitter	24"	N/A	0.20 lb.
GTS 30 VO	21000400	UVC Emitter	30"	N/A	0.20 lb.
GTS 36 VO	21000500	UVC Emitter	36"	N/A	0.25 lb.
GTS 42 VO	21000600	UVC Emitter	42"	N/A	0.25 lb.

STERIL-AIRE®

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 Email: sales@steril-aire.com



Complies with current U.S. and Canadian UL Standards for use in HVAC equipment.

Represented By: