

Air System Sizing Summary for TI

Project Name: RED DOT TI
 Prepared by: Universal Refrigeration



08/14/2023
09:54AM

Air System Information

Air System Name:.....**TI**
 Air System Type:.....**Single Zone CAV**
 Number of zones:.....**1**
 Floor Area:.....**2000.0** sqft
 Location:.....**Tacoma, Washington**

Sizing Calculation Information

Calculation Months:.....**Jan to Dec**
 Calculation method:.....**Transfer Function Method**

Central Cooling Coil Sizing Data

Total coil load:.....	7.9 Tons	Load occurs at:.....	Jul 1500
Total coil load:.....	95.1 MBH	OA DB / WB:.....	86.0/65.0 F
Sensible coil load:.....	95.1 MBH	Entering DB / WB:.....	84.6/64.7 F
Coil airflow:.....	3456 CFM	Leaving DB / WB:.....	58.9/55.3 F
Sensible heat ratio:.....	1.000	Coil ADP:.....	56.0 F
Area per unit load:.....	252.4 sqft/Ton	Bypass Factor:.....	0.100
Load per unit area:.....	47.5 BTU/(hr-sqft)	Resulting RH:.....	.48 %
		Design supply temp:.....	58.0 F

Central Heating Coil Sizing Data

Max coil load:.....	166.6 MBH	Load occurs at:.....	Des Htg
Coil airflow:.....	3456 CFM	Ent DB / Lvg DB:.....	24.9/70.0 F
Load per unit area:.....	83.3 BTU/(hr-sqft)		

Supply Fan Sizing Data

Actual max airflow:.....	3456 CFM	Fan motor BHP:.....	0.10 BHP
Standard airflow:.....	3416 CFM	Fan motor kW:.....	0.07 kW
Actual max airflow per unit area:.....	1.73 CFM/sqft	Fan static:.....	-1.00 in wg

Outdoor Ventilation Air Data

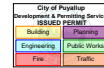
Design airflow:.....	3000 CFM	Airflow per person:.....	150.00 CFM/person
Airflow per unit floor area:.....	1.50 CFM/sqft		

Space Sizing Data

Space Name	Maximum Cooling Sensible MBH	Design Airflow CFM	Time of Peak Load	Maximum Heating Load MBH	Space Floor Area sqft	Space CFM/sqft
TI	62.7	3456	Jul 1500	0.6	2000.0	1.73

System Design Load Summary for TI

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	DESIGN COOLING			DESIGN HEATING		
	Jul 1500			Design Heating Day		
	OA DB / WB 86 F / 65 F			OA DB / WB 18 F / 14.8 F		
Zone Loads based on TFM	Details	Sensible BTU/hr	Latent BTU/hr	Details	Sensible BTU/hr	Latent BTU/hr
Window and Skylight Solar Loads	0 sqft	0	-	0 sqft	-	-
Wall Transmission	0 sqft	0	-	0 sqft	0	-
Roof Transmission	0 sqft	0	-	0 sqft	0	-
Window Transmission	0 sqft	0	-	0 sqft	0	-
Skylight Transmission	0 sqft	0	-	0 sqft	0	-
Door Loads	0 sqft	0	-	0 sqft	0	-
Floor Transmission	2000 sqft	0	-	2000 sqft	0	-
Partitions/Ceilings	3440 sqft	11597	-	3440 sqft	0	-
Overhead Lighting	2000 W	6824	-	0 W	0	-
Electric Equipment	10000 W	34120	-	0 W	0	-
People	20	5900	9100	0	0	0
Infiltration	-	176	-49	-	555	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	7% / 7%	4103	634	7%	39	0
>> Total Zone Loads	-	62720	9685	-	594	0
Thermostat and Pulldown Adjustment	-	-1316	0	-	-253	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Ventilation Load	3000 CFM	33424	-9685	3000 CFM	166534	0
Supply Fan Load	3456 CFM	254	-	3456 CFM	-254	-
>> Total System Loads	-	95081	-1	-	166621	0
Central Cooling Coil	-	95081	0	-	0	0
Central Heating Coil	-	0	-	-	166621	-
>> Total Coil Loads	-	95081	0	-	166621	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

System Psychrometrics for TI

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Location: Tacoma, Washington

Altitude: 322.0 ft

Data for: Jul DESIGN COOLING DAY, 1500

