

# Air System Sizing Summary for PARTS ROOM BLOCK LOAD

Project Name: 22076  
Prepared by: Renna Enterprises INC.

10/20/22  
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## Air System Information

System Name	PARTS ROOM BLOCK LOAD	Number of Zones	1
Equipment Class	SPLT AHU	Floor Area	495.0 ft²
System Type	SZCAV		

## Sizing Calculation Information

### Zone and Space Sizing Method:

Zone CFM	Peak zone sensible load	Calculation Months	Jan to Dec
Space CFM	Coincident space loads	Sizing Data	Calculated

## Central Cooling Coil Sizing Data

Total coil load	1.2 Tons	Load occurs at	Jun 1700
Sensible coil load	0.9 Tons	OA DB /WB	92.5 / 79.6 °F
Coil CFM at Jun 1700	566 CFM	Entering DB /WB	76.3 / 66.4 °F
Max possible CFM	566 CFM	Leaving DB /WB	59.2 / 58.3 °F
Design supply temp.	59.0 °F	Coil ADP	57.3 °F
ft³/Ton	414.6	Bypass factor	0.100
BTU/hr/ft²	28.9	Resulting RH	59 %
Water flow @ 10.0 °F rise	- gpm	Zone T-stat Check	1 of 1 OK

## Central Heating Coil Sizing Data

Max coil load	8284 BTU/hr	Load occurs at	Des Htg
Coil CFM at Des Htg	566 CFM	BTU/hr/ft²	16.7
Max possible CFM	566 CFM	Ent. DB / Lvg DB	64.7 / 78.2 °F
Water flow @ 20.0 °F drop	- gpm		

## Supply Fan Sizing Data

Actual max CFM at Jul 1600	566 CFM	Fan motor BHP	0.12 BHP
Standard CFM	565 CFM	Fan motor kW	0.09 kW
Actual max CFM/ft²	1.14 CFM/ft²	Fan static	1.00 in. wg.

## Outdoor Ventilation Air Data

Design airflow CFM	80 CFM	CFM/person	26.67 CFM/person
CFM/ft²	0.16 CFM/ft²		

Ronald R Renna  
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## Zone Sizing Summary for PARTS ROOM BLOCK LOAD

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### Sizing Calculation Information

Zone and Space Sizing Method:

Zone CFM \_\_\_\_\_ Peak zone sensible load

Calculation Months \_\_\_\_\_ Jan to Dec

Space CFM \_\_\_\_\_ Coincident space loads

Sizing Data \_\_\_\_\_ Calculated

### Zone Sizing Data

Zone Name	Maximum Cooling Sensible (MBH)	Design Air Flow (CFM)	Minimum Air Flow (CFM)	Time of Peak Load	Maximum Heating Load (MBH)
Zone 1	8.5	560	560	Jul 1600	5.6

### Zone Terminal Sizing Data

No Zone Terminal Sizing Data required for this system

### Space Loads and Airflows

Zone Name / Space Name	Mult	Cooling Sensible (MBH)	Time of Load	Air Flow (CFM)	Heating Load (MBH)
<b>Zone 1</b>					
PARTS ROOM	1	8.5	Jul 1600	560	5.6

# Air System Design Load Summary for PARTS ROOM BLOCK LOAD

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ZONE LOADS	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jun 1700			HEATING DATA AT DES HTG		
	COOLING OA DB /WB 92.5 °F / 79.6 °F			HEATING OA DB /WB 35.0 °F / 30.3 °F		
	Details	Sensible (BTU/hr)	Latent (BTU/hr)	Details	Sensible (BTU/hr)	Latent (BTU/hr)
Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	975 ft²	3923	-	975 ft²	3102	-
Roof Transmission	495 ft²	1281	-	495 ft²	912	-
Glass Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Transmission	0 ft²	0	-	0 ft²	0	-
Floor Transmission	495 ft²	0	-	495 ft²	1286	-
Partitions	0 ft²	0	-	0 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	495 W	1689	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	0 W	0	-	0	0	-
People	3	660	630	0	0	0
Infiltration	-	0	0	0	0	0
Miscellaneous	-	500	0	-	0	0
Safety Factor	5% / 5%	403	32	5%	265	0
>> Total Zone Loads	-	8456	662	-	5565	0
Zone Conditioning	-	8416	662	-	5545	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	566 CFM	0	-	560 CFM	0	-
Ventilation Load	80 CFM	1632	3231	80 CFM	2985	0
Supply Fan Load	566 CFM	302	-	566 CFM	-302	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	1%	85	-	1%	56	-
>> Total System Loads	-	10435	3893	-	8284	0
Central Cooling Coil	-	10435	3893	-	0	0
Central Heating Coil	-	0	-	-	8284	-
>> Total Conditioning	-	10435	3893	-	8284	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		