Air System Sizing Summary for Packaged Rooftop AHU

Project Name: Example Problem 08/27/2002
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Air System Information

Air System Name	**Packaged Rooftop AHU**		Number of zones	**11**	
Equipment Class	**PKG ROOF**		Floor Area	**9700.0**	ft²
Air System Type	**VAV**				

Sizing Calculation Information

Zone and Space Sizing Method:

Zone CFM	**Peak zone sensible load**		Calculation Months	**May to Nov**	
Space CFM	**Individual peak space loads**		Sizing Data	**Calculated**	

Central Cooling Coil Sizing Data

Total coil load	**32.1**	Tons	Load occurs at	**Aug 1600**	
Total coil load	**384.9**	MBH	OA DB / WB	**91.0 / 74.0**	°F
Sensible coil load	**275.2**	MBH	Entering DB / WB	**86.5 / 68.9**	°F
Coil CFM at Aug 1600	**7815**	CFM	Leaving DB / WB	**53.1 / 52.4**	°F
Max block CFM at Aug 1700	**8445**	CFM	Coil ADP	**51.4**	°F
Sum of peak zone CFM	**8586**	CFM	Bypass Factor	**0.050**	
Sensible heat ratio	**0.715**		Resulting RH	**47**	%
ft²/Ton	**302.4**		Design supply temp.	**55.0**	°F
BTU/(hr-ft²)	**39.7**		Zone T-stat Check	**11 of 11**	OK
Water flow @ 10.0 °F rise	**N/A**		Max zone temperature deviation	**0.0**	°F

Preheat Coil Sizing Data

Max coil load	**191.7**	MBH	Load occurs at	**Des Htg**	
Coil CFM at Des Htg	**3136**	CFM	Ent. DB / Lvg DB	**-6.0 / 52.0**	°F
Max coil CFM	**8445**	CFM			
Water flow @ 20.0 °F drop	**N/A**				

Supply Fan Sizing Data

Actual max CFM at Aug 1700	**8445**	CFM	Fan motor BHP	**7.38**	BHP
Standard CFM	**8242**	CFM	Fan motor kW	**5.50**	kW
Actual max CFM/ft²	**0.87**	CFM/ft²	Fan static	**3.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**3142**	CFM	CFM/person	**15.55**	CFM/person
CFM/ft²	**0.32**	CFM/ft²			