

Air System Sizing Summary for AHU-1

Project Name: 6300 SW 98ST PINECREST (MARK REARDON)
Prepared by: AA

12/30/2025
10:49AM

Air System Information

Air System Name **AHU-1**
Equipment Class **SPLT AHU**
Air System Type **SZCAV**

Number of zones **1**
Floor Area **2235.0** ft²
Location **Miami IAP, Florida**

Sizing Calculation Information

Zone and Space Sizing Method:

Zone CFM **Sum of space airflow rates**
Space CFM **Individual peak space loads**

Calculation Months **Jan to Dec**
Sizing Data **Calculated**

Central Cooling Coil Sizing Data

Total coil load **4.5** Tons
Total coil load **54.2** MBH
Sensible coil load **49.7** MBH
Coil CFM at Oct 1500 **2690** CFM
Max block CFM **2690** CFM
Sum of peak zone CFM **2690** CFM
Sensible heat ratio **0.917**
ft²/Ton **494.6**
BTU/(hr-ft²) **24.3**
Water flow @ 10.0 °F rise **N/A**

Load occurs at **Oct 1500**
OA DB / WB **87.0 / 75.0** °F
Entering DB / WB **76.2 / 64.6** °F
Leaving DB / WB **59.0 / 57.9** °F
Coil ADP **57.1** °F
Bypass Factor **0.100**
Resulting RH **54** %
Design supply temp. **55.0** °F
Zone T-stat Check **1 of 1** OK
Max zone temperature deviation **0.0** °F

Central Heating Coil Sizing Data

Max coil load **23.0** MBH
Coil CFM at Des Htg **2690** CFM
Max coil CFM **2690** CFM
Water flow @ 20.0 °F drop **N/A**

Load occurs at **Des Htg**
BTU/(hr-ft²) **12.7**
Ent. DB / Lvg DB **69.2 / 78.9** °F

Supply Fan Sizing Data

Actual max CFM **2690** CFM
Standard CFM **2688** CFM
Actual max CFM/ft² **1.20** CFM/ft²

Fan motor BHP **0.00** BHP
Fan motor kW **0.00** kW
Fan static **0.00** in wg

Outdoor Ventilation Air Data

Design airflow CFM **15** CFM
CFM/ft² **0.01** CFM/ft²

CFM/person **15.00** CFM/person

Zone Sizing Summary for AHU-1

Project Name: 6300 SW 98ST PINECREST (MARK REARDON)
Prepared by: AA

12/30/2025
10:49AM

Air System Information

Air System Name **AHU-1**
Equipment Class **SPLT AHU**
Air System Type **SZCAV**

Number of zones **1**
Floor Area **2235.0** ft²
Location **Miami IAP, Florida**

Sizing Calculation Information

Zone and Space Sizing Method:

Zone CFM **Sum of space airflow rates**
Space CFM **Individual peak space loads**

Calculation Months **Jan to Dec**
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 Floor Area (ft ²)	Zone CFM/ft ²
Zone 1	51.7	2690	2690	Oct 1500	29.6	2235.0	1.20

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)	Floor Area (ft ²)	Space CFM/ft ²
Zone 1							
1-BACK KITCHEN PANTRY	1	4.6	Nov 1400	215	1.5	154.0	1.39
1-BATH 5	1	1.4	Oct 1600	63	1.0	47.0	1.35
1-CORRIDOR STAIR	1	3.7	Jul 1700	172	3.5	383.0	0.45
1-CORRIDOR TO LAUNDRY	1	5.9	Jul 1600	272	4.0	222.0	1.22
1-DINING R	1	3.2	Jun 1700	150	2.5	230.0	0.65
1-KITCHEN-BREAKFAST	1	16.7	Nov 1400	775	7.1	486.0	1.60
1-LAUNDRY	1	4.8	Jul 1700	221	1.7	134.0	1.65
1-MAID ROOM	1	4.3	Jul 1700	200	1.7	157.0	1.27
1-MAIDROOM CLO	1	0.4	Oct 1600	20	0.3	28.0	0.72
1-POWDER ROOM	1	1.2	Jul 1600	62	1.7	59.0	1.06
1-FAMILY	1	11.6	Dec 1400	539	4.6	335.0	1.61

Air System Design Load Summary for AHU-1

Project Name: 6300 SW 98ST PINECREST (MARK REARDON)
Prepared by: AA

12/30/2025
10:49AM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Oct 1500 COOLING OA DB / WB 87.0 °F / 75.0 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 46.0 °F / 38.6 °F		
ZONE LOADS	Details	Sensible (BTU/hr)	Latent (BTU/hr)	Details	Sensible (BTU/hr)	Latent (BTU/hr)
Window & Skylight Solar Loads	579 ft²	20262	-	579 ft²	-	-
Wall Transmission	1313 ft²	2929	-	1313 ft²	4509	-
Roof Transmission	1228 ft²	2825	-	1228 ft²	1306	-
Window Transmission	579 ft²	6341	-	579 ft²	15287	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	1654 ft²	0	-	1654 ft²	0	-
Partitions	404 ft²	1053	-	404 ft²	4040	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	2235 W	7626	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	1900 W	6483	-	0	0	-
People	1	230	120	0	0	0
Infiltration	-	1942	3997	-	4439	0
Miscellaneous	-	2000	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	-	51690	4117	-	29581	0
Zone Conditioning	-	49525	4117	-	27903	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	2690 CFM	0	-	2690 CFM	0	-
Ventilation Load	15 CFM	177	400	15 CFM	377	0
Supply Fan Load	2690 CFM	0	-	2690 CFM	0	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	-	49701	4517	-	28280	0
Central Cooling Coil	-	49701	4520	-	0	0
Central Heating Coil	-	0	-	-	28280	-
>> Total Conditioning	-	49701	4520	-	28280	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 AHU-1

Project Name: 6300 SW 98ST PINECREST (MARK REARDON)
Prepared by: AA

12/30/2025
10:49AM

October DESIGN COOLING DAY, 1500

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	87.0	0.01593	15	400	177	400
Vent - Return Mixing	Outlet	76.2	0.01034	2690	614	-	-
Central Cooling Coil	Outlet	59.0	0.00998	2690	614	49701	4520
Central Heating Coil	Outlet	59.0	0.00998	2690	614	0	-
Supply Fan	Outlet	59.0	0.00998	2690	614	0	-
Cold Supply Duct	Outlet	59.0	0.00998	2690	614	-	-
Zone Air	-	76.1	0.01031	2690	615	49525	4117
Return Plenum	Outlet	76.1	0.01031	2690	615	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)

Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4744.4 BTU/(hr-CFM)

Site Altitude = 13.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	51690	Cooling	49525	76.1	2690	615	0	0

System Psychrometrics for AHU-1

Project Name: 6300 SW 98ST PINECREST (MARK REARDON)
Prepared by: AA

12/30/2025
10:49AM

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	46.0	0.00325	15	400	-377	0
Vent - Return Mixing	Outlet	69.2	0.00325	2690	798	-	-
Central Cooling Coil	Outlet	69.2	0.00325	2690	798	0	0
Central Heating Coil	Outlet	78.9	0.00325	2690	798	28280	-
Supply Fan	Outlet	78.9	0.00325	2690	798	0	-
Cold Supply Duct	Outlet	78.9	0.00325	2690	798	-	-
Zone Air	-	69.3	0.00325	2690	800	-27903	0
Return Plenum	Outlet	69.3	0.00325	2690	800	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)

Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4744.4 BTU/(hr-CFM)

Site Altitude = 13.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	-29581	Heating	-27903	69.3	2690	800	0	0

Psychrometric Analysis for AHU-1

Project Name: 6300 SW 98ST PINECREST (MARK REARDON)
Prepared by: AA

12/30/2025
10:49AM

Location: Miami IAP, Florida

Altitude: 13.0 ft.

Data for: October DESIGN COOLING DAY, 1500

