

Air System Sizing Summary for HVAC-1

Project Name: 172_jojo
Prepared by: EngrTeam

05/17/2025
07:53PM

Air System Information

Air System Name HVAC-1
Equipment Class PKG VERT
Air System Type SZCAV

Number of zones 1
Floor Area 1824.0 ft²
Location TURLOCK, California

Sizing Calculation Information

Calculation Months Jan to Dec
Sizing Data Calculated

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

Central Cooling Coil Sizing Data

Total coil load 4.9 Tons
Total coil load 59.0 MBH
Sensible coil load 57.8 MBH
Coil CFM at Aug 1700 2895 CFM
Max block CFM 2895 CFM
Sum of peak zone CFM 2895 CFM
Sensible heat ratio 0.979
CFM/Ton 588.3
ft²/Ton 370.7
BTU/(hr-ft²) 32.4
Water flow @ 10.0 °F rise N/A

Load occurs at Aug 1700
OA DB / WB 82.5 / 62.8 °F
Entering DB / WB 76.7 / 63.6 °F
Leaving DB / WB 58.2 / 56.7 °F
Coil ADP 55.7 °F
Bypass Factor 0.120
Resulting RH 50 %
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 27.7 MBH
Coil CFM at Des Htg 2895 CFM
Max coil CFM 2895 CFM
Water flow @ 20.0 °F drop N/A

Load occurs at Des Htg
BTU/(hr-ft²) 15.2
Ent. DB / Lvg DB 67.2 / 76.1 °F

Supply Fan Sizing Data

Actual max CFM 2895 CFM
Standard CFM 2893 CFM
Actual max CFM/ft² 1.59 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 230 CFM
CFM/ft² 0.13 CFM/ft²

CFM/person 14.37 CFM/person

Zone Sizing Summary for HVAC-1

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Number of zones 1
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Calculation Months Jan to Dec
Sizing Data Calculated

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

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/ft ²	Reheat Coil Load (MBH)	Reheat Coil Water gpm @ 20.0 °F	Zone Htg Unit Coil Load (MBH)	Zone Htg Unit Water gpm @ 20.0 °F	Mixing Box Fan Airflow (CFM)
Zone 1	2895	2895	1.59	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (ft ²)
Zone 1	60.9	Jul 1700	20.1	1824.0

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft ²)	Space CFM/ft ²
Zone 1							
MASTER BATHROOM	1	4.5	Aug 1700	207	2.3	218.0	0.95
MASTER BEDROOM	1	8.2	Oct 1500	382	2.9	346.0	1.10
MASTER W.I.C.	1	3.5	Jul 1600	163	1.5	121.0	1.35
LAUNDRY ROOM	1	10.8	Jul 1700	498	1.5	113.0	4.41
KITCHEN	1	20.8	Jul 1800	965	5.7	282.0	3.42
GREAT ROOM	1	11.4	Jul 1700	528	4.7	631.0	0.84
PANTRY ROOM	1	1.9	Aug 1700	87	0.9	76.0	1.14
POWDER	1	1.4	Jul 1800	65	0.7	37.0	1.75

Ventilation Sizing Summary for HVAC-1

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1. Summary

Ventilation Sizing Method **Sum of Space OA Airflows**
Design Ventilation Airflow Rate **230** CFM

2. Space Ventilation Analysis

Zone Name / Space Name	Mult.	Floor Area (ft²)	Maximum Occupants	Maximum Supply Air (CFM)	Required Outdoor Air (CFM/person)	Required Outdoor Air (CFM/ft²)	Required Outdoor Air (CFM)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (CFM)
Zone 1									
MASTER BATHROOM	1	218.0	2.0	207.5	5.00	0.06	0.0	0.0	23.1
MASTER BEDROOM	1	346.0	2.0	381.7	5.00	0.06	0.0	0.0	30.8
MASTER W.I.C.	1	121.0	1.0	163.0	5.00	0.12	0.0	0.0	19.5
LAUNDRY ROOM	1	113.0	2.0	498.5	5.00	0.12	0.0	0.0	23.6
KITCHEN	1	282.0	2.0	964.8	7.50	0.12	0.0	0.0	48.8
GREAT ROOM	1	631.0	5.0	527.7	5.00	0.06	0.0	0.0	62.9
PANTRY ROOM	1	76.0	1.0	86.7	5.00	0.12	0.0	0.0	14.1
POWDER	1	37.0	1.0	64.7	5.00	0.06	0.0	0.0	7.2
Totals (incl. Space Multipliers)				2894.5					230.0

Air System Design Load Summary for HVAC-1

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	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Aug 1700 COOLING OA DB / WB 82.5 °F / 62.8 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 37.0 °F / 31.1 °F		
ZONE LOADS	Details	Sensible (BTU/hr)	Latent (BTU/hr)	Details	Sensible (BTU/hr)	Latent (BTU/hr)
Window & Skylight Solar Loads	205 ft²	12868	-	205 ft²	-	-
Wall Transmission	4328 ft²	7006	-	4328 ft²	8059	-
Roof Transmission	1824 ft²	4116	-	1824 ft²	2411	-
Window Transmission	205 ft²	586	-	205 ft²	3978	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	570 ft²	832	-	570 ft²	5645	-
Floor Transmission	1824 ft²	0	-	1824 ft²	0	-
Partitions	3052 ft²	0	-	3052 ft²	0	-
Ceiling	1824 ft²	0	-	1824 ft²	0	-
Overhead Lighting	1459 W	4674	-	0	0	-
Task Lighting	1459 W	4809	-	0	0	-
Electric Equipment	4150 W	14106	-	0	0	-
People	16	3876	3270	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	15% / 5%	7931	164	0%	0	0
>> Total Zone Loads	-	60803	3434	-	20093	0
Zone Conditioning	-	56223	3434	-	19564	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	2895 CFM	0	-	2895 CFM	0	-
Ventilation Load	230 CFM	1562	-2175	230 CFM	8144	0
Supply Fan Load	2895 CFM	0	-	2895 CFM	0	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	-	57785	1259	-	27707	0
Central Cooling Coil	-	57785	1262	-	0	0
Central Heating Coil	-	0	-	-	27707	-
>> Total Conditioning	-	57785	1262	-	27707	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

Zone Design Load Summary for HVAC-1

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Zone 1	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jul 1700			HEATING DATA AT DES HTG		
	COOLING OA DB / WB 82.5 °F / 62.8 °F			HEATING OA DB / WB 37.0 °F / 31.1 °F		
	OCCUPIED T-STAT 75.0 °F			OCCUPIED T-STAT 70.0 °F		
ZONE LOADS	Details	Sensible (BTU/hr)	Latent (BTU/hr)	Details	Sensible (BTU/hr)	Latent (BTU/hr)
Window & Skylight Solar Loads	205 ft²	12840	-	205 ft²	-	-
Wall Transmission	4328 ft²	6663	-	4328 ft²	8059	-
Roof Transmission	1824 ft²	4533	-	1824 ft²	2411	-
Window Transmission	205 ft²	586	-	205 ft²	3978	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	570 ft²	832	-	570 ft²	5645	-
Floor Transmission	1824 ft²	0	-	1824 ft²	0	-
Partitions	3052 ft²	0	-	3052 ft²	0	-
Ceiling	1824 ft²	0	-	1824 ft²	0	-
Overhead Lighting	1459 W	4674	-	0	0	-
Task Lighting	1459 W	4809	-	0	0	-
Electric Equipment	4150 W	14106	-	0	0	-
People	16	3876	3270	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	15% / 5%	7938	164	0%	0	0
>> Total Zone Loads	-	60856	3434	-	20093	0

Space Design Load Summary for HVAC-1

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TABLE 1.1.A. Component Loads For Space "MASTER BATHROOM" In Zone "Zone 1"

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Aug 1700 COOLING OA DB / WB 82.5 °F / 62.8 °F OCCUPIED T-STAT 75.0 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 37.0 °F / 31.1 °F OCCUPIED T-STAT 70.0 °F		
		Sensible (BTU/hr)	Latent (BTU/hr)		Sensible (BTU/hr)	Latent (BTU/hr)
SPACE LOADS	Details			Details		
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	721 ft²	1206	-	721 ft²	1342	-
Roof Transmission	218 ft²	492	-	218 ft²	288	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	72 ft²	105	-	72 ft²	713	-
Floor Transmission	218 ft²	0	-	218 ft²	0	-
Partitions	296 ft²	0	-	296 ft²	0	-
Ceiling	218 ft²	0	-	218 ft²	0	-
Overhead Lighting	174 W	595	-	0	0	-
Task Lighting	174 W	595	-	0	0	-
Electric Equipment	100 W	341	-	0	0	-
People	2	560	540	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	15% / 5%	584	27	0%	0	0
>> Total Zone Loads	-	4479	567	-	2343	0

TABLE 1.1.B. Envelope Loads For Space "MASTER BATHROOM" In Zone "Zone 1"

	Area (ft²)	U-Value (BTU/(hr-ft²-°F))	Shade Coeff.	COOLING TRANS (BTU/hr)	COOLING SOLAR (BTU/hr)	HEATING TRANS (BTU/hr)
N EXPOSURE						
WALL	134	0.056	-	102	-	250
DOOR	18	0.300	-	26	-	178
S EXPOSURE						
WALL	152	0.056	-	331	-	283
E EXPOSURE						
WALL	226	0.056	-	289	-	421
DOOR	18	0.300	-	26	-	178
W EXPOSURE						
WALL	208	0.056	-	484	-	388
DOOR	36	0.300	-	53	-	356
H EXPOSURE						
ROOF	218	0.040	-	492	-	288

Space Design Load Summary for HVAC-1

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TABLE 1.2.A. Component Loads For Space "MASTER BEDROOM" In Zone "Zone 1"

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Oct 1500			HEATING DATA AT DES HTG		
	COOLING OA DB / WB 78.5 °F / 60.8 °F			HEATING OA DB / WB 37.0 °F / 31.1 °F		
	OCCUPIED T-STAT 75.0 °F			OCCUPIED T-STAT 70.0 °F		
SPACE LOADS	Details	Sensible (BTU/hr)	Latent (BTU/hr)	Details	Sensible (BTU/hr)	Latent (BTU/hr)
Window & Skylight Solar Loads	30 ft²	2759	-	30 ft²	-	-
Wall Transmission	639 ft²	773	-	639 ft²	1190	-
Roof Transmission	346 ft²	584	-	346 ft²	457	-
Window Transmission	30 ft²	8	-	30 ft²	582	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	65 ft²	9	-	65 ft²	642	-
Floor Transmission	346 ft²	0	-	346 ft²	0	-
Partitions	367 ft²	0	-	367 ft²	0	-
Ceiling	346 ft²	0	-	346 ft²	0	-
Overhead Lighting	277 W	944	-	0	0	-
Task Lighting	277 W	944	-	0	0	-
Electric Equipment	200 W	682	-	0	0	-
People	2	460	240	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	15% / 5%	1075	12	0%	0	0
>> Total Zone Loads	-	8239	252	-	2871	0

TABLE 1.2.B. Envelope Loads For Space "MASTER BEDROOM" In Zone "Zone 1"

	Area	U-Value	Shade	COOLING	COOLING	HEATING
	(ft²)	(BTU/(hr-ft²-°F))	Coeff.	TRANS	SOLAR	TRANS
				(BTU/hr)	(BTU/hr)	(BTU/hr)
N EXPOSURE						
WALL	180	0.056	-	34	-	335
S EXPOSURE						
WALL	150	0.056	-	467	-	279
WINDOW 1	30	0.588	0.811	8	2759	582
E EXPOSURE						
WALL	158	0.056	-	151	-	294
DOOR	29	0.300	-	4	-	285
W EXPOSURE						
WALL	151	0.056	-	121	-	281
DOOR	36	0.300	-	5	-	356
H EXPOSURE						
ROOF	346	0.040	-	584	-	457

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TABLE 1.3.A. Component Loads For Space "MASTER W.I.C." In Zone "Zone 1"

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jul 1600			HEATING DATA AT DES HTG		
	COOLING OA DB / WB 83.0 °F / 63.0 °F			HEATING OA DB / WB 37.0 °F / 31.1 °F		
	OCCUPIED T-STAT 75.0 °F			OCCUPIED T-STAT 70.0 °F		
		Sensible	Latent		Sensible	Latent
SPACE LOADS	Details	(BTU/hr)	(BTU/hr)	Details	(BTU/hr)	(BTU/hr)
Window & Skylight Solar Loads	20 ft²	969	-	20 ft²	-	-
Wall Transmission	398 ft²	564	-	398 ft²	742	-
Roof Transmission	121 ft²	330	-	121 ft²	160	-
Window Transmission	20 ft²	59	-	20 ft²	388	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	18 ft²	27	-	18 ft²	178	-
Floor Transmission	121 ft²	0	-	121 ft²	0	-
Partitions	218 ft²	0	-	218 ft²	0	-
Ceiling	121 ft²	0	-	121 ft²	0	-
Overhead Lighting	97 W	330	-	0	0	-
Task Lighting	97 W	330	-	0	0	-
Electric Equipment	50 W	171	-	0	0	-
People	1	280	270	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	15% / 5%	459	14	0%	0	0
>> Total Zone Loads	-	3520	284	-	1468	0

TABLE 1.3.B. Envelope Loads For Space "MASTER W.I.C." In Zone "Zone 1"

	Area	U-Value	Shade	COOLING	COOLING	HEATING
	(ft²)	(BTU/(hr-ft²-°F))	Coeff.	TRANS	SOLAR	TRANS
				(BTU/hr)	(BTU/hr)	(BTU/hr)
N EXPOSURE						
WALL	106	0.056	-	84	-	197
S EXPOSURE						
WALL	106	0.056	-	186	-	197
E EXPOSURE						
WALL	92	0.056	-	135	-	172
WINDOW 1	20	0.588	0.811	59	969	388
W EXPOSURE						
WALL	94	0.056	-	158	-	175
DOOR	18	0.300	-	27	-	178
H EXPOSURE						
ROOF	121	0.040	-	330	-	160

Space Design Load Summary for HVAC-1

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TABLE 1.4.A. Component Loads For Space "LAUNDRY ROOM" In Zone "Zone 1"

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jul 1700 COOLING OA DB / WB 82.5 °F / 62.8 °F OCCUPIED T-STAT 75.0 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 37.0 °F / 31.1 °F OCCUPIED T-STAT 70.0 °F		
		Sensible (BTU/hr)	Latent (BTU/hr)		Sensible (BTU/hr)	Latent (BTU/hr)
SPACE LOADS	Details			Details		
Window & Skylight Solar Loads	15 ft²	311	-	15 ft²	-	-
Wall Transmission	467 ft²	695	-	467 ft²	870	-
Roof Transmission	113 ft²	281	-	113 ft²	149	-
Window Transmission	15 ft²	43	-	15 ft²	291	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	18 ft²	26	-	18 ft²	178	-
Floor Transmission	113 ft²	0	-	113 ft²	0	-
Partitions	342 ft²	0	-	342 ft²	0	-
Ceiling	113 ft²	0	-	113 ft²	0	-
Overhead Lighting	90 W	308	-	0	0	-
Task Lighting	90 W	308	-	0	0	-
Electric Equipment	2000 W	6824	-	0	0	-
People	2	560	540	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	15% / 5%	1404	27	0%	0	0
>> Total Zone Loads	-	10761	567	-	1488	0

TABLE 1.4.B. Envelope Loads For Space "LAUNDRY ROOM" In Zone "Zone 1"

	Area (ft²)	U-Value (BTU/(hr-ft²-°F))	Shade Coeff.	COOLING TRANS (BTU/hr)	COOLING SOLAR (BTU/hr)	HEATING TRANS (BTU/hr)
N EXPOSURE						
WALL	143	0.056	-	122	-	266
WINDOW 1	15	0.588	0.811	43	311	291
S EXPOSURE						
WALL	140	0.056	-	238	-	261
DOOR	18	0.300	-	26	-	178
E EXPOSURE						
WALL	92	0.056	-	124	-	171
W EXPOSURE						
WALL	92	0.056	-	212	-	171
H EXPOSURE						
ROOF	113	0.040	-	281	-	149

Space Design Load Summary for HVAC-1

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TABLE 1.5.A. Component Loads For Space "KITCHEN" In Zone "Zone 1"

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jul 1800 COOLING OA DB / WB 81.3 °F / 62.4 °F OCCUPIED T-STAT 75.0 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 37.0 °F / 31.1 °F OCCUPIED T-STAT 70.0 °F		
		Sensible	Latent		Sensible	Latent
SPACE LOADS	Details	(BTU/hr)	(BTU/hr)	Details	(BTU/hr)	(BTU/hr)
Window & Skylight Solar Loads	110 ft²	8701	-	110 ft²	-	-
Wall Transmission	733 ft²	1093	-	733 ft²	1365	-
Roof Transmission	282 ft²	591	-	282 ft²	373	-
Window Transmission	110 ft²	274	-	110 ft²	2134	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	184 ft²	234	-	184 ft²	1822	-
Floor Transmission	282 ft²	0	-	282 ft²	0	-
Partitions	626 ft²	0	-	626 ft²	0	-
Ceiling	282 ft²	0	-	282 ft²	0	-
Overhead Lighting	226 W	770	-	0	0	-
Task Lighting	226 W	770	-	0	0	-
Electric Equipment	1500 W	5118	-	0	0	-
People	2	560	540	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	15% / 5%	2717	27	0%	0	0
>> Total Zone Loads	-	20828	567	-	5693	0

TABLE 1.5.B. Envelope Loads For Space "KITCHEN" In Zone "Zone 1"

	Area	U-Value	Shade	COOLING	COOLING	HEATING
	(ft²)	(BTU/(hr-ft²-°F))	Coeff.	TRANS	SOLAR	TRANS
				(BTU/hr)	(BTU/hr)	(BTU/hr)
N EXPOSURE						
WALL	224	0.056	-	200	-	418
DOOR	36	0.300	-	46	-	356
S EXPOSURE						
WALL	130	0.056	-	196	-	242
DOOR	130	0.300	-	165	-	1287
E EXPOSURE						
WALL	235	0.056	-	293	-	438
DOOR	18	0.300	-	23	-	178
W EXPOSURE						
WALL	143	0.056	-	405	-	267
WINDOW 1	30	0.588	0.811	75	2373	582
WINDOW 2	80	0.588	0.811	199	6328	1552
H EXPOSURE						
ROOF	282	0.040	-	591	-	373

Space Design Load Summary for HVAC-1

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TABLE 1.6.A. Component Loads For Space "GREAT ROOM" In Zone "Zone 1"

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jul 1700 COOLING OA DB / WB 82.5 °F / 62.8 °F OCCUPIED T-STAT 75.0 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 37.0 °F / 31.1 °F OCCUPIED T-STAT 70.0 °F		
		Sensible (BTU/hr)	Latent (BTU/hr)		Sensible (BTU/hr)	Latent (BTU/hr)
SPACE LOADS	Details			Details		
Window & Skylight Solar Loads	30 ft²	2290	-	30 ft²	-	-
Wall Transmission	761 ft²	1199	-	761 ft²	1417	-
Roof Transmission	631 ft²	1568	-	631 ft²	834	-
Window Transmission	30 ft²	86	-	30 ft²	582	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	184 ft²	268	-	184 ft²	1822	-
Floor Transmission	631 ft²	0	-	631 ft²	0	-
Partitions	748 ft²	0	-	748 ft²	0	-
Ceiling	631 ft²	0	-	631 ft²	0	-
Overhead Lighting	505 W	1417	-	0	0	-
Task Lighting	505 W	1553	-	0	0	-
Electric Equipment	200 W	629	-	0	0	-
People	5	896	600	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	15% / 5%	1486	30	0%	0	0
>> Total Zone Loads	-	11393	630	-	4655	0

TABLE 1.6.B. Envelope Loads For Space "GREAT ROOM" In Zone "Zone 1"

	Area (ft²)	U-Value (BTU/(hr-ft²-°F))	Shade Coeff.	COOLING TRANS (BTU/hr)	COOLING SOLAR (BTU/hr)	HEATING TRANS (BTU/hr)
N EXPOSURE						
WALL	130	0.056	-	111	-	242
DOOR	130	0.300	-	190	-	1287
S EXPOSURE						
WALL	242	0.056	-	411	-	451
DOOR	18	0.300	-	26	-	178
E EXPOSURE						
WALL	227	0.056	-	306	-	423
W EXPOSURE						
WALL	161	0.056	-	371	-	300
WINDOW 1	30	0.588	0.811	86	2290	582
DOOR	36	0.300	-	53	-	356
H EXPOSURE						
ROOF	631	0.040	-	1568	-	834

Space Design Load Summary for HVAC-1

Project Name: 172_jojo
Prepared by: EngrTeam

05/17/2025
07:53PM

TABLE 1.7.A. Component Loads For Space "PANTRY ROOM" In Zone "Zone 1"

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Aug 1700 COOLING OA DB / WB 82.5 °F / 62.8 °F OCCUPIED T-STAT 75.0 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 37.0 °F / 31.1 °F OCCUPIED T-STAT 70.0 °F		
		Sensible (BTU/hr)	Latent (BTU/hr)		Sensible (BTU/hr)	Latent (BTU/hr)
SPACE LOADS	Details			Details		
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	352 ft²	568	-	352 ft²	656	-
Roof Transmission	76 ft²	171	-	76 ft²	100	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	15 ft²	22	-	15 ft²	149	-
Floor Transmission	76 ft²	0	-	76 ft²	0	-
Partitions	184 ft²	0	-	184 ft²	0	-
Ceiling	76 ft²	0	-	76 ft²	0	-
Overhead Lighting	61 W	207	-	0	0	-
Task Lighting	61 W	207	-	0	0	-
Electric Equipment	50 W	171	-	0	0	-
People	1	280	270	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	15% / 5%	244	14	0%	0	0
>> Total Zone Loads	-	1871	284	-	904	0

TABLE 1.7.B. Envelope Loads For Space "PANTRY ROOM" In Zone "Zone 1"

	Area (ft²)	U-Value (BTU/(hr-ft²-°F))	Shade Coeff.	COOLING TRANS (BTU/hr)	COOLING SOLAR (BTU/hr)	HEATING TRANS (BTU/hr)
N EXPOSURE						
WALL	91	0.056	-	69	-	170
S EXPOSURE						
WALL	76	0.056	-	167	-	142
DOOR	15	0.300	-	22	-	149
E EXPOSURE						
WALL	92	0.056	-	118	-	172
W EXPOSURE						
WALL	92	0.056	-	214	-	172
H EXPOSURE						
ROOF	76	0.040	-	171	-	100

Space Design Load Summary for HVAC-1

Project Name: 172_jojo
Prepared by: EngrTeam

05/17/2025
07:53PM

TABLE 1.8.A. Component Loads For Space "POWDER" In Zone "Zone 1"

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jul 1800 COOLING OA DB / WB 81.3 °F / 62.4 °F OCCUPIED T-STAT 75.0 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 37.0 °F / 31.1 °F OCCUPIED T-STAT 70.0 °F		
		Sensible (BTU/hr)	Latent (BTU/hr)		Sensible (BTU/hr)	Latent (BTU/hr)
SPACE LOADS	Details			Details		
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	257 ft²	466	-	257 ft²	479	-
Roof Transmission	37 ft²	78	-	37 ft²	49	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	14 ft²	18	-	14 ft²	143	-
Floor Transmission	37 ft²	0	-	37 ft²	0	-
Partitions	272 ft²	0	-	272 ft²	0	-
Ceiling	37 ft²	0	-	37 ft²	0	-
Overhead Lighting	30 W	101	-	0	0	-
Task Lighting	30 W	101	-	0	0	-
Electric Equipment	50 W	171	-	0	0	-
People	1	280	270	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	15% / 5%	182	14	0%	0	0
>> Total Zone Loads	-	1396	284	-	671	0

TABLE 1.8.B. Envelope Loads For Space "POWDER" In Zone "Zone 1"

	Area (ft²)	U-Value (BTU/(hr-ft²-°F))	Shade Coeff.	COOLING TRANS (BTU/hr)	COOLING SOLAR (BTU/hr)	HEATING TRANS (BTU/hr)
N EXPOSURE						
WALL	42	0.056	-	37	-	78
S EXPOSURE						
WALL	42	0.056	-	63	-	78
E EXPOSURE						
WALL	80	0.056	-	99	-	149
DOOR	14	0.300	-	18	-	143
W EXPOSURE						
WALL	94	0.056	-	266	-	175
H EXPOSURE						
ROOF	37	0.040	-	78	-	49

System Psychrometrics for HVAC-1

Project Name: 172_jojo
Prepared by: EngrTeam

05/17/2025
07:53PM

August DESIGN COOLING DAY, 1700

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	82.5	0.00770	230	400	1562	-2175
Vent - Return Mixing	Outlet	76.7	0.00954	2895	1077	-	-
Central Cooling Coil	Outlet	58.2	0.00944	2895	1077	57785	1262
Central Heating Coil	Outlet	58.2	0.00944	2895	1077	0	-
Supply Fan	Outlet	58.2	0.00944	2895	1077	0	-
Cold Supply Duct	Outlet	58.2	0.00944	2895	1077	-	-
Zone Air	-	76.2	0.00969	2895	1136	56223	3434
Return Plenum	Outlet	76.2	0.00969	2895	1136	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 = 4743.9 BTU/(hr-CFM)

Site Altitude = 16.0 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	60803	Cooling	56223	76.2	2895	1136	0	0

System Psychrometrics for HVAC-1

Project Name: 172_jojo
Prepared by: EngrTeam

05/17/2025
07:53PM

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	37.0	0.00230	230	400	-8144	0
Vent - Return Mixing	Outlet	67.2	0.00230	2895	516	-	-
Central Cooling Coil	Outlet	67.2	0.00230	2895	516	0	0
Central Heating Coil	Outlet	76.1	0.00230	2895	516	27707	-
Supply Fan	Outlet	76.1	0.00230	2895	516	0	-
Cold Supply Duct	Outlet	76.1	0.00230	2895	516	-	-
Zone Air	-	69.8	0.00230	2895	526	-19564	0
Return Plenum	Outlet	69.8	0.00230	2895	526	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 = 4743.9 BTU/(hr-CFM)

Site Altitude = 16.0 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	-20093	Heating	-19564	69.8	2895	526	0	0

System Psychrometrics for HVAC-1

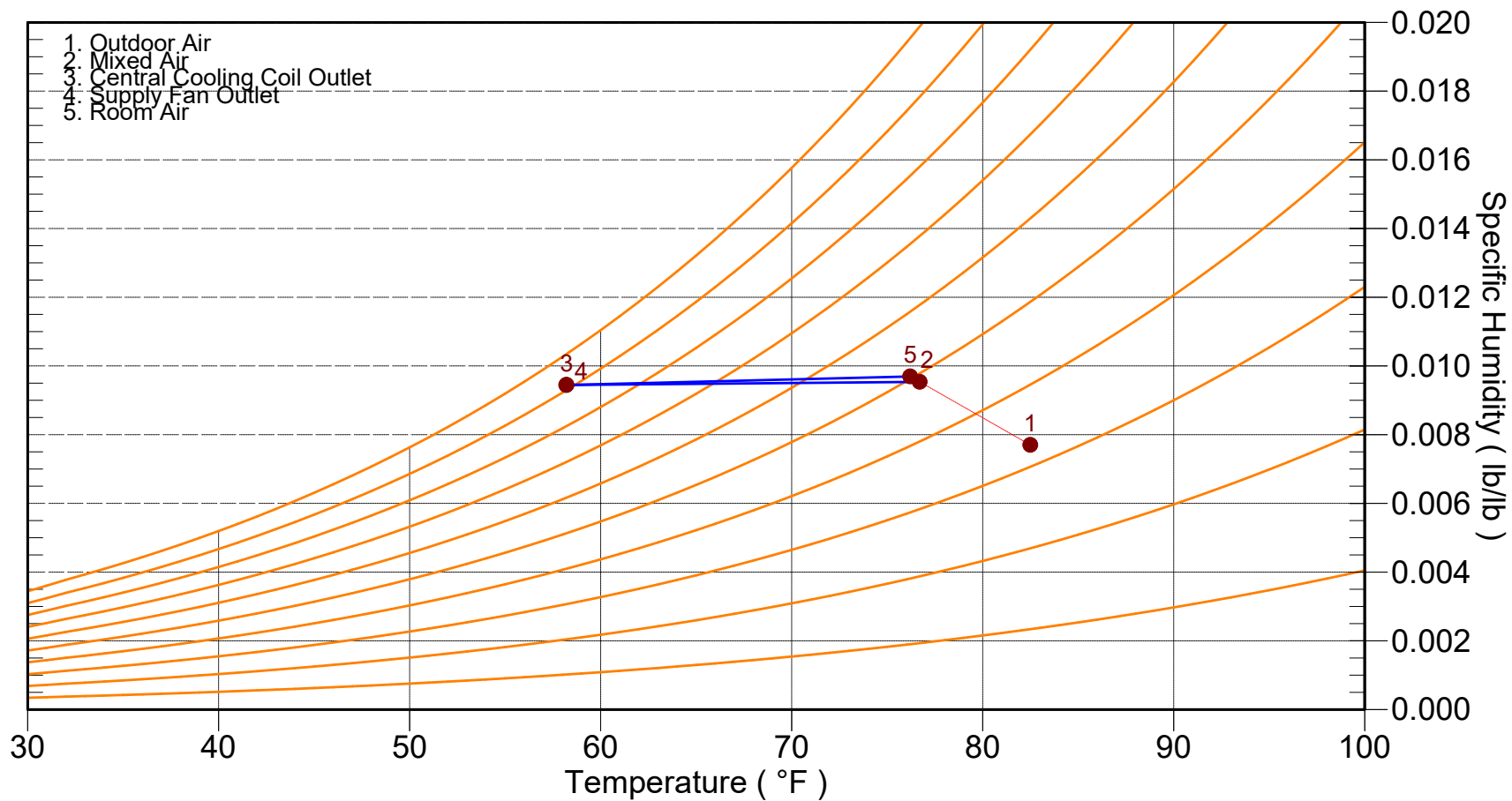
Project Name: 172_jojo
Prepared by: EngrTeam

05/17/2025
07:53PM

Location: TURLOCK, California

Altitude: 16.0 ft.

Data for: August DESIGN COOLING DAY, 1700

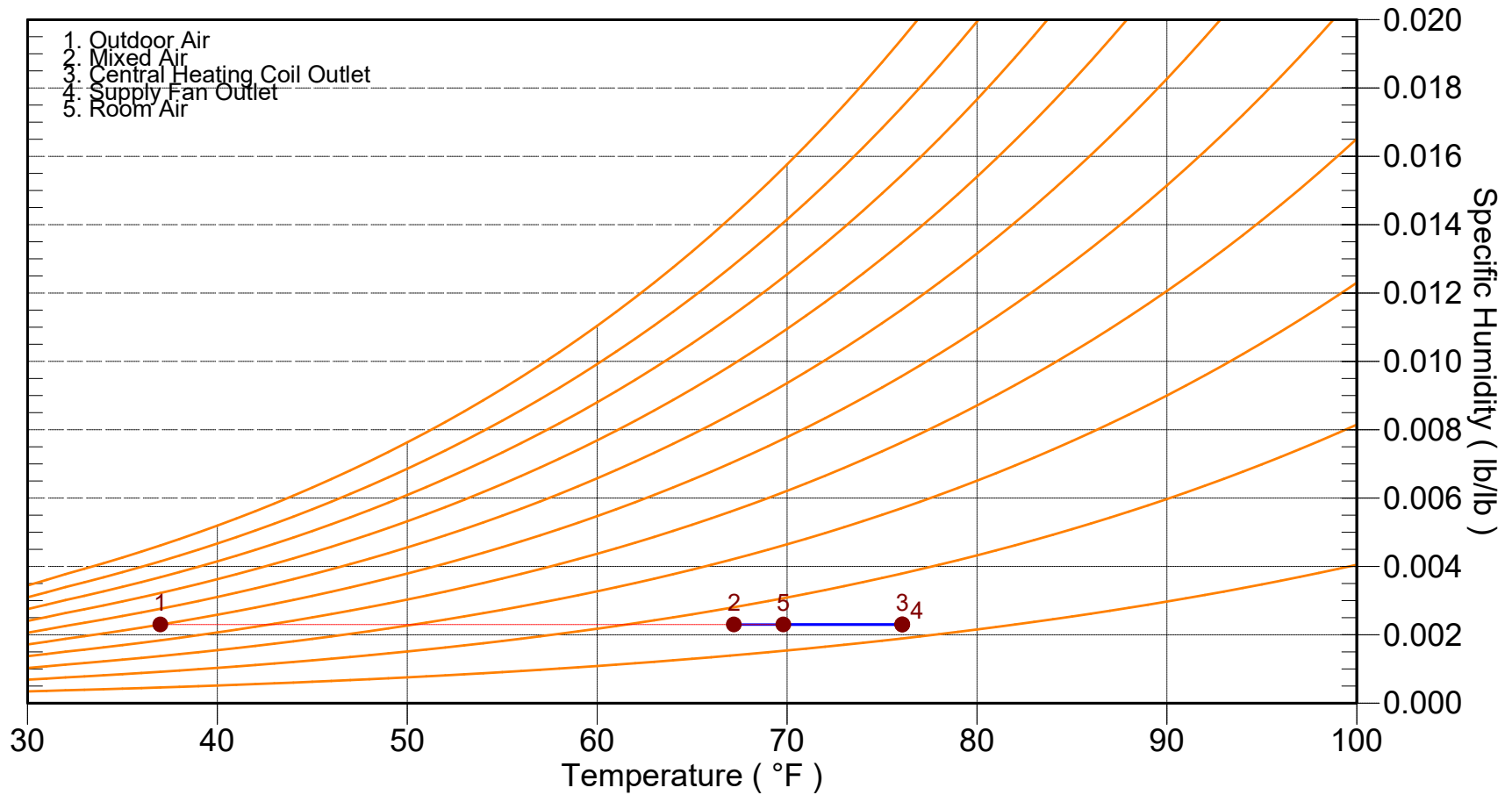


System Psychrometrics for HVAC-1

Project Name: 172_jojo
Prepared by: EngrTeam

05/17/2025
07:53PM

Location: TURLOCK, California
Altitude: 16.0 ft.
Data for: WINTER DESIGN HEATING



Air System Sizing Summary for HVAC-2

Project Name: 172_jojo
Prepared by: EngrTeam

05/17/2025
07:53PM

Air System Information

Air System Name HVAC-2
Equipment Class PKG VERT
Air System Type SZCAV

Number of zones 1
Floor Area 2623.5 ft²
Location TURLOCK, California

Sizing Calculation Information

Calculation Months Jan to Dec
Sizing Data Calculated

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

Central Cooling Coil Sizing Data

Total coil load 5.2 Tons
Total coil load 62.8 MBH
Sensible coil load 60.7 MBH
Coil CFM at Jun 1700 3119 CFM
Max block CFM 3119 CFM
Sum of peak zone CFM 3119 CFM
Sensible heat ratio 0.967
CFM/Ton 596.4
ft²/Ton 501.6
BTU/(hr-ft²) 23.9
Water flow @ 10.0 °F rise N/A

Load occurs at Jun 1700
OA DB / WB 81.5 / 62.8 °F
Entering DB / WB 76.7 / 63.9 °F
Leaving DB / WB 58.6 / 57.2 °F
Coil ADP 56.2 °F
Bypass Factor 0.120
Resulting RH 52 %
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 37.8 MBH
Coil CFM at Des Htg 3119 CFM
Max coil CFM 3119 CFM
Water flow @ 20.0 °F drop N/A

Load occurs at Des Htg
BTU/(hr-ft²) 14.4
Ent. DB / Lvg DB 66.1 / 77.3 °F

Supply Fan Sizing Data

Actual max CFM 3119 CFM
Standard CFM 3117 CFM
Actual max CFM/ft² 1.19 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 330 CFM
CFM/ft² 0.13 CFM/ft²

CFM/person 10.01 CFM/person

Zone Sizing Summary for HVAC-2

Project Name: 172_jojo
Prepared by: EngrTeam

05/17/2025
07:53PM

Air System Information

Air System Name HVAC-2
Equipment Class PKG VERT
Air System Type SZCAV

Number of zones 1
Floor Area 2623.5 ft²
Location TURLOCK, California

Sizing Calculation Information

Calculation Months Jan to Dec
Sizing Data Calculated

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

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/ft ²	Reheat Coil Load (MBH)	Reheat Coil Water gpm @ 20.0 °F	Zone Htg Unit Coil Load (MBH)	Zone Htg Unit Water gpm @ 20.0 °F	Mixing Box Fan Airflow (CFM)
Zone 1	3119	3119	1.19	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (ft ²)
Zone 1	64.9	Aug 1700	27.6	2623.5

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft ²)	Space CFM/ft ²
Zone 1							
BATHROOM 2	1	4.8	Oct 1500	224	1.7	110.0	2.03
BATHROOM 5	1	3.3	Aug 1700	155	1.4	172.5	0.90
BEDROOM 3	1	6.8	Sep 1500	315	2.6	195.0	1.61
BEDROOM 4	1	7.7	Sep 1600	357	2.7	220.0	1.62
BEDROOM 5	1	7.3	Jul 1600	337	2.8	390.0	0.86
HALLWAY	1	4.4	Jul 1700	203	3.2	221.0	0.92
MASTER BEDROOM 2	1	10.9	Jul 1700	505	3.6	445.0	1.13
MASTER W.I.C. 2	1	2.5	Jul 1700	115	1.1	131.0	0.88
MEDIA ROOM	1	5.9	Jun 1700	275	1.5	127.0	2.17
MASTER BATHROOM 2	1	4.4	Jun 1800	203	2.0	202.0	1.01
LIVING & FOYER ROOM	1	9.3	Jul 1700	431	5.0	410.0	1.05

Ventilation Sizing Summary for HVAC-2

Project Name: 172_jojo
Prepared by: EngrTeam

05/17/2025
07:53PM

1. Summary

Ventilation Sizing Method **Sum of Space OA Airflows**
Design Ventilation Airflow Rate **330** CFM

2. Space Ventilation Analysis

Zone Name / Space Name	Mult.	Floor Area (ft²)	Maximum Occupants	Maximum Supply Air (CFM)	Required Outdoor Air (CFM/person)	Required Outdoor Air (CFM/ft²)	Required Outdoor Air (CFM)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (CFM)
Zone 1									
BATHROOM 2	1	110.0	2.0	223.6	5.00	0.06	0.0	0.0	16.6
BATHROOM 5	1	172.5	2.0	154.9	5.00	0.06	0.0	0.0	20.4
BEDROOM 3	1	195.0	2.0	314.8	5.00	0.06	0.0	0.0	21.7
BEDROOM 4	1	220.0	2.0	356.6	5.00	0.06	0.0	0.0	23.2
BEDROOM 5	1	390.0	2.0	337.3	5.00	0.06	0.0	0.0	33.4
HALLWAY	1	221.0	2.0	203.0	5.00	0.06	0.0	0.0	23.3
MASTER BEDROOM 2	1	445.0	2.0	504.7	5.00	0.06	0.0	0.0	36.7
MASTER W.I.C. 2	1	131.0	1.0	115.0	5.00	0.12	0.0	0.0	20.7
MEDIA ROOM	1	127.0	8.0	275.3	5.00	0.06	0.0	0.0	47.6
MASTER BATHROOM 2	1	202.0	2.0	203.0	5.00	0.06	0.0	0.0	22.1
LIVING & FOYER ROOM	1	410.0	8.0	430.9	5.00	0.06	0.0	0.0	64.6
Totals (incl. Space Multipliers)				3119.1					330.3

Air System Design Load Summary for HVAC-2

Project Name: 172_jojo
Prepared by: EngrTeam

05/17/2025
07:53PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jun 1700 COOLING OA DB / WB 81.5 °F / 62.8 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 37.0 °F / 31.1 °F		
ZONE LOADS	Details	Sensible (BTU/hr)	Latent (BTU/hr)	Details	Sensible (BTU/hr)	Latent (BTU/hr)
Window & Skylight Solar Loads	250 ft²	11366	-	250 ft²	-	-
Wall Transmission	7202 ft²	11030	-	7202 ft²	13411	-
Roof Transmission	2624 ft²	6551	-	2624 ft²	3468	-
Window Transmission	250 ft²	568	-	250 ft²	4851	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	588 ft²	682	-	588 ft²	5821	-
Floor Transmission	410 ft²	0	-	410 ft²	0	-
Partitions	5129 ft²	0	-	5129 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	2099 W	6795	-	0	0	-
Task Lighting	2099 W	6957	-	0	0	-
Electric Equipment	1350 W	4404	-	0	0	-
People	33	7024	5010	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	15% / 5%	8307	251	0%	0	0
>> Total Zone Loads	-	63684	5261	-	27551	0
Zone Conditioning	-	58784	5261	-	26191	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	3119 CFM	0	-	3119 CFM	0	-
Ventilation Load	330 CFM	1925	-3210	330 CFM	11610	0
Supply Fan Load	3119 CFM	0	-	3119 CFM	0	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	-	60709	2050	-	37801	0
Central Cooling Coil	-	60709	2052	-	0	0
Central Heating Coil	-	0	-	-	37801	-
>> Total Conditioning	-	60709	2052	-	37801	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

Zone Design Load Summary for HVAC-2

Project Name: 172_jojo
Prepared by: EngrTeam

05/17/2025
07:53PM

Zone 1	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Aug 1700			HEATING DATA AT DES HTG		
	COOLING OA DB / WB 82.5 °F / 62.8 °F			HEATING OA DB / WB 37.0 °F / 31.1 °F		
	OCCUPIED T-STAT 75.0 °F			OCCUPIED T-STAT 70.0 °F		
ZONE LOADS	Details	Sensible (BTU/hr)	Latent (BTU/hr)	Details	Sensible (BTU/hr)	Latent (BTU/hr)
Window & Skylight Solar Loads	250 ft²	11764	-	250 ft²	-	-
Wall Transmission	7202 ft²	11967	-	7202 ft²	13411	-
Roof Transmission	2624 ft²	5920	-	2624 ft²	3468	-
Window Transmission	250 ft²	715	-	250 ft²	4851	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	588 ft²	858	-	588 ft²	5821	-
Floor Transmission	410 ft²	0	-	410 ft²	0	-
Partitions	5129 ft²	0	-	5129 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	2099 W	6795	-	0	0	-
Task Lighting	2099 W	6957	-	0	0	-
Electric Equipment	1350 W	4404	-	0	0	-
People	33	7024	5010	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	15% / 5%	8461	251	0%	0	0
>> Total Zone Loads	-	64865	5261	-	27551	0

Space Design Load Summary for HVAC-2

Project Name: 172_jojo
Prepared by: EngrTeam

05/17/2025
07:53PM

TABLE 1.1.A. Component Loads For Space "BATHROOM 2" In Zone "Zone 1"

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Oct 1500 COOLING OA DB / WB 78.5 °F / 60.8 °F OCCUPIED T-STAT 75.0 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 37.0 °F / 31.1 °F OCCUPIED T-STAT 70.0 °F		
		Sensible (BTU/hr)	Latent (BTU/hr)		Sensible (BTU/hr)	Latent (BTU/hr)
SPACE LOADS	Details			Details		
Window & Skylight Solar Loads	25 ft²	2299	-	25 ft²	-	-
Wall Transmission	379 ft²	370	-	379 ft²	706	-
Roof Transmission	110 ft²	186	-	110 ft²	145	-
Window Transmission	25 ft²	7	-	25 ft²	485	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	36 ft²	5	-	36 ft²	356	-
Floor Transmission	0 ft²	0	-	0 ft²	0	-
Partitions	380 ft²	0	-	380 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	88 W	300	-	0	0	-
Task Lighting	88 W	300	-	0	0	-
Electric Equipment	50 W	171	-	0	0	-
People	2	560	540	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	15% / 5%	630	27	0%	0	0
>> Total Zone Loads	-	4827	567	-	1693	0

TABLE 1.1.B. Envelope Loads For Space "BATHROOM 2" In Zone "Zone 1"

	Area (ft²)	U-Value (BTU/(hr-ft²-°F))	Shade Coeff.	COOLING TRANS (BTU/hr)	COOLING SOLAR (BTU/hr)	HEATING TRANS (BTU/hr)
N EXPOSURE						
WALL	60	0.056	-	11	-	112
S EXPOSURE						
WALL	35	0.056	-	109	-	65
WINDOW 1	25	0.588	0.811	7	2299	485
E EXPOSURE						
WALL	142	0.056	-	136	-	264
DOOR	18	0.300	-	3	-	178
W EXPOSURE						
WALL	142	0.056	-	114	-	264
DOOR	18	0.300	-	3	-	178
H EXPOSURE						
ROOF	110	0.040	-	186	-	145

Space Design Load Summary for HVAC-2

Project Name: 172_jojo
Prepared by: EngrTeam

05/17/2025
07:53PM

TABLE 1.2.A. Component Loads For Space "BATHROOM 5" In Zone "Zone 1"

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Aug 1700 COOLING OA DB / WB 82.5 °F / 62.8 °F OCCUPIED T-STAT 75.0 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 37.0 °F / 31.1 °F OCCUPIED T-STAT 70.0 °F		
		Sensible (BTU/hr)	Latent (BTU/hr)		Sensible (BTU/hr)	Latent (BTU/hr)
SPACE LOADS	Details			Details		
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	514 ft²	820	-	514 ft²	957	-
Roof Transmission	173 ft²	389	-	173 ft²	228	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	18 ft²	26	-	18 ft²	178	-
Floor Transmission	0 ft²	0	-	0 ft²	0	-
Partitions	150 ft²	0	-	150 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	138 W	471	-	0	0	-
Task Lighting	138 W	471	-	0	0	-
Electric Equipment	50 W	171	-	0	0	-
People	2	560	540	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	15% / 5%	436	27	0%	0	0
>> Total Zone Loads	-	3343	567	-	1363	0

TABLE 1.2.B. Envelope Loads For Space "BATHROOM 5" In Zone "Zone 1"

	Area (ft²)	U-Value (BTU/(hr-ft²-°F))	Shade Coeff.	COOLING TRANS (BTU/hr)	COOLING SOLAR (BTU/hr)	HEATING TRANS (BTU/hr)
N EXPOSURE						
WALL	150	0.056	-	114	-	279
S EXPOSURE						
WALL	132	0.056	-	288	-	246
DOOR	18	0.300	-	26	-	178
E EXPOSURE						
WALL	116	0.056	-	148	-	216
W EXPOSURE						
WALL	116	0.056	-	270	-	216
H EXPOSURE						
ROOF	173	0.040	-	389	-	228

Space Design Load Summary for HVAC-2

Project Name: 172_jojo
Prepared by: EngrTeam

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TABLE 1.3.A. Component Loads For Space "BEDROOM 3" In Zone "Zone 1"

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Sep 1500 COOLING OA DB / WB 80.5 °F / 61.8 °F OCCUPIED T-STAT 75.0 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 37.0 °F / 31.1 °F OCCUPIED T-STAT 70.0 °F		
		Sensible (BTU/hr)	Latent (BTU/hr)		Sensible (BTU/hr)	Latent (BTU/hr)
SPACE LOADS	Details			Details		
Window & Skylight Solar Loads	50 ft²	2919	-	50 ft²	-	-
Wall Transmission	443 ft²	585	-	443 ft²	825	-
Roof Transmission	195 ft²	427	-	195 ft²	258	-
Window Transmission	50 ft²	73	-	50 ft²	970	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	54 ft²	40	-	54 ft²	535	-
Floor Transmission	0 ft²	0	-	0 ft²	0	-
Partitions	273 ft²	0	-	273 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	156 W	532	-	0	0	-
Task Lighting	156 W	532	-	0	0	-
Electric Equipment	100 W	341	-	0	0	-
People	2	460	240	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	15% / 5%	886	12	0%	0	0
>> Total Zone Loads	-	6796	252	-	2588	0

TABLE 1.3.B. Envelope Loads For Space "BEDROOM 3" In Zone "Zone 1"

	Area (ft²)	U-Value (BTU/(hr-ft²-°F))	Shade Coeff.	COOLING TRANS (BTU/hr)	COOLING SOLAR (BTU/hr)	HEATING TRANS (BTU/hr)
N EXPOSURE						
WALL	78	0.056	-	30	-	144
DOOR	36	0.300	-	27	-	356
S EXPOSURE						
WALL	89	0.056	-	243	-	165
WINDOW 1	25	0.588	0.811	36	1896	485
E EXPOSURE						
WALL	135	0.056	-	174	-	251
WINDOW 1	25	0.588	0.811	36	1023	485
W EXPOSURE						
WALL	142	0.056	-	137	-	264
DOOR	18	0.300	-	13	-	178
H EXPOSURE						
ROOF	195	0.040	-	427	-	258

Space Design Load Summary for HVAC-2

Project Name: 172_jojo
Prepared by: EngrTeam

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TABLE 1.4.A. Component Loads For Space "BEDROOM 4" In Zone "Zone 1"

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Sep 1600 COOLING OA DB / WB 81.0 °F / 62.0 °F OCCUPIED T-STAT 75.0 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 37.0 °F / 31.1 °F OCCUPIED T-STAT 70.0 °F		
		Sensible (BTU/hr)	Latent (BTU/hr)		Sensible (BTU/hr)	Latent (BTU/hr)
SPACE LOADS	Details			Details		
Window & Skylight Solar Loads	50 ft²	3389	-	50 ft²	-	-
Wall Transmission	476 ft²	716	-	476 ft²	886	-
Roof Transmission	220 ft²	449	-	220 ft²	291	-
Window Transmission	50 ft²	88	-	50 ft²	970	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	54 ft²	49	-	54 ft²	535	-
Floor Transmission	0 ft²	0	-	0 ft²	0	-
Partitions	290 ft²	0	-	290 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	176 W	601	-	0	0	-
Task Lighting	176 W	601	-	0	0	-
Electric Equipment	100 W	341	-	0	0	-
People	2	460	240	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	15% / 5%	1004	12	0%	0	0
>> Total Zone Loads	-	7698	252	-	2682	0

TABLE 1.4.B. Envelope Loads For Space "BEDROOM 4" In Zone "Zone 1"

	Area (ft²)	U-Value (BTU/(hr-ft²-°F))	Shade Coeff.	COOLING TRANS (BTU/hr)	COOLING SOLAR (BTU/hr)	HEATING TRANS (BTU/hr)
N EXPOSURE						
WALL	94	0.056	-	45	-	175
DOOR	36	0.300	-	32	-	356
S EXPOSURE						
WALL	105	0.056	-	297	-	196
WINDOW 1	25	0.588	0.811	44	1769	485
E EXPOSURE						
WALL	142	0.056	-	158	-	264
DOOR	18	0.300	-	16	-	178
W EXPOSURE						
WALL	135	0.056	-	215	-	251
WINDOW 1	25	0.588	0.811	44	1619	485
H EXPOSURE						
ROOF	220	0.040	-	449	-	291

Space Design Load Summary for HVAC-2

Project Name: 172_jojo
Prepared by: EngrTeam

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TABLE 1.5.A. Component Loads For Space "BEDROOM 5" In Zone "Zone 1"

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jul 1600 COOLING OA DB / WB 83.0 °F / 63.0 °F OCCUPIED T-STAT 75.0 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 37.0 °F / 31.1 °F OCCUPIED T-STAT 70.0 °F		
		Sensible (BTU/hr)	Latent (BTU/hr)		Sensible (BTU/hr)	Latent (BTU/hr)
SPACE LOADS	Details			Details		
Window & Skylight Solar Loads	25 ft²	1212	-	25 ft²	-	-
Wall Transmission	681 ft²	972	-	681 ft²	1268	-
Roof Transmission	390 ft²	1064	-	390 ft²	516	-
Window Transmission	25 ft²	74	-	25 ft²	485	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	54 ft²	81	-	54 ft²	535	-
Floor Transmission	0 ft²	0	-	0 ft²	0	-
Partitions	570 ft²	0	-	570 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	312 W	1065	-	0	0	-
Task Lighting	312 W	1065	-	0	0	-
Electric Equipment	100 W	341	-	0	0	-
People	2	460	240	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	15% / 5%	950	12	0%	0	0
>> Total Zone Loads	-	7282	252	-	2803	0

TABLE 1.5.B. Envelope Loads For Space "BEDROOM 5" In Zone "Zone 1"

	Area (ft²)	U-Value (BTU/(hr-ft²-°F))	Shade Coeff.	COOLING TRANS (BTU/hr)	COOLING SOLAR (BTU/hr)	HEATING TRANS (BTU/hr)
N EXPOSURE						
WALL	172	0.056	-	137	-	320
DOOR	18	0.300	-	27	-	178
S EXPOSURE						
WALL	190	0.056	-	334	-	354
E EXPOSURE						
WALL	165	0.056	-	242	-	307
WINDOW 1	25	0.588	0.811	74	1212	485
W EXPOSURE						
WALL	154	0.056	-	259	-	287
DOOR	36	0.300	-	54	-	356
H EXPOSURE						
ROOF	390	0.040	-	1064	-	516

Space Design Load Summary for HVAC-2

Project Name: 172_jojo
Prepared by: EngrTeam

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TABLE 1.6.A. Component Loads For Space "HALLWAY" In Zone "Zone 1"

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jul 1700			HEATING DATA AT DES HTG		
	COOLING OA DB / WB 82.5 °F / 62.8 °F			HEATING OA DB / WB 37.0 °F / 31.1 °F		
	OCCUPIED T-STAT 75.0 °F			OCCUPIED T-STAT 70.0 °F		
		Sensible	Latent		Sensible	Latent
SPACE LOADS	Details	(BTU/hr)	(BTU/hr)	Details	(BTU/hr)	(BTU/hr)
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	851 ft²	1516	-	851 ft²	1585	-
Roof Transmission	221 ft²	549	-	221 ft²	292	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	130 ft²	189	-	130 ft²	1283	-
Floor Transmission	0 ft²	0	-	0 ft²	0	-
Partitions	981 ft²	0	-	981 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	177 W	496	-	0	0	-
Task Lighting	177 W	544	-	0	0	-
Electric Equipment	50 W	157	-	0	0	-
People	2	358	240	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	15% / 5%	572	12	0%	0	0
>> Total Zone Loads	-	4382	252	-	3160	0

TABLE 1.6.B. Envelope Loads For Space "HALLWAY" In Zone "Zone 1"

				COOLING	COOLING	HEATING
	Area	U-Value	Shade	TRANS	SOLAR	TRANS
	(ft²)	(BTU/(hr-ft²-°F))	Coeff.	(BTU/hr)	(BTU/hr)	(BTU/hr)
N EXPOSURE						
WALL	26	0.056	-	22	-	48
DOOR	14	0.300	-	21	-	143
S EXPOSURE						
WALL	111	0.056	-	188	-	206
DOOR	36	0.300	-	53	-	356
E EXPOSURE						
WALL	354	0.056	-	476	-	659
DOOR	43	0.300	-	63	-	428
W EXPOSURE						
WALL	361	0.056	-	831	-	672
DOOR	36	0.300	-	53	-	356
H EXPOSURE						
ROOF	221	0.040	-	549	-	292

Space Design Load Summary for HVAC-2

Project Name: 172_jojo
Prepared by: EngrTeam

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TABLE 1.7.A. Component Loads For Space "MASTER BEDROOM 2" In Zone "Zone 1"						
	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jul 1700 COOLING OA DB / WB 82.5 °F / 62.8 °F OCCUPIED T-STAT 75.0 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 37.0 °F / 31.1 °F OCCUPIED T-STAT 70.0 °F		
		Sensible	Latent		Sensible	Latent
SPACE LOADS	Details	(BTU/hr)	(BTU/hr)	Details	(BTU/hr)	(BTU/hr)
Window & Skylight Solar Loads	50 ft²	3817	-	50 ft²	-	-
Wall Transmission	705 ft²	1071	-	705 ft²	1312	-
Roof Transmission	445 ft²	1106	-	445 ft²	588	-
Window Transmission	50 ft²	143	-	50 ft²	970	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	72 ft²	105	-	72 ft²	713	-
Floor Transmission	0 ft²	0	-	0 ft²	0	-
Partitions	587 ft²	0	-	587 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	356 W	1215	-	0	0	-
Task Lighting	356 W	1215	-	0	0	-
Electric Equipment	100 W	341	-	0	0	-
People	2	460	240	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	15% / 5%	1421	12	0%	0	0
>> Total Zone Loads	-	10894	252	-	3584	0

TABLE 1.7.B. Envelope Loads For Space "MASTER BEDROOM 2" In Zone "Zone 1"						
	Area	U-Value	Shade	COOLING	COOLING	HEATING
	(ft²)	(BTU/(hr-ft²-°F))	Coeff.	TRANS	SOLAR	TRANS
				(BTU/hr)	(BTU/hr)	(BTU/hr)
N EXPOSURE						
WALL	173	0.056	-	148	-	323
S EXPOSURE						
WALL	173	0.056	-	294	-	323
E EXPOSURE						
WALL	204	0.056	-	274	-	380
DOOR	36	0.300	-	53	-	356
W EXPOSURE						
WALL	154	0.056	-	354	-	287
WINDOW 1	50	0.588	0.811	143	3817	970
DOOR	36	0.300	-	53	-	356
H EXPOSURE						
ROOF	445	0.040	-	1106	-	588

Space Design Load Summary for HVAC-2

Project Name: 172_jojo
Prepared by: EngrTeam

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TABLE 1.8.A. Component Loads For Space "MASTER W.I.C. 2" In Zone "Zone 1"

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jul 1700			HEATING DATA AT DES HTG		
	COOLING OA DB / WB 82.5 °F / 62.8 °F			HEATING OA DB / WB 37.0 °F / 31.1 °F		
	OCCUPIED T-STAT 75.0 °F			OCCUPIED T-STAT 70.0 °F		
SPACE LOADS	Details	Sensible (BTU/hr)	Latent (BTU/hr)	Details	Sensible (BTU/hr)	Latent (BTU/hr)
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	414 ft²	641	-	414 ft²	771	-
Roof Transmission	131 ft²	326	-	131 ft²	173	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	18 ft²	26	-	18 ft²	178	-
Floor Transmission	0 ft²	0	-	0 ft²	0	-
Partitions	216 ft²	0	-	216 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	105 W	358	-	0	0	-
Task Lighting	105 W	358	-	0	0	-
Electric Equipment	50 W	171	-	0	0	-
People	1	280	270	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	15% / 5%	324	14	0%	0	0
>> Total Zone Loads	-	2483	284	-	1122	0

TABLE 1.8.B. Envelope Loads For Space "MASTER W.I.C. 2" In Zone "Zone 1"

	Area	U-Value	Shade	COOLING	COOLING	HEATING
	(ft²)	(BTU/(hr-ft²-°F))	Coeff.	TRANS	SOLAR	TRANS
				(BTU/hr)	(BTU/hr)	(BTU/hr)
N EXPOSURE						
WALL	106	0.056	-	91	-	197
S EXPOSURE						
WALL	88	0.056	-	149	-	164
DOOR	18	0.300	-	26	-	178
E EXPOSURE						
WALL	110	0.056	-	148	-	205
W EXPOSURE						
WALL	110	0.056	-	253	-	205
H EXPOSURE						
ROOF	131	0.040	-	326	-	173

Space Design Load Summary for HVAC-2

Project Name: 172_jojo
Prepared by: EngrTeam

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TABLE 1.9.A. Component Loads For Space "MEDIA ROOM" In Zone "Zone 1"

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jun 1700 COOLING OA DB / WB 81.5 °F / 62.8 °F OCCUPIED T-STAT 75.0 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 37.0 °F / 31.1 °F OCCUPIED T-STAT 70.0 °F		
		Sensible (BTU/hr)	Latent (BTU/hr)		Sensible (BTU/hr)	Latent (BTU/hr)
SPACE LOADS	Details			Details		
Window & Skylight Solar Loads	25 ft²	577	-	25 ft²	-	-
Wall Transmission	396 ft²	598	-	396 ft²	737	-
Roof Transmission	127 ft²	317	-	127 ft²	168	-
Window Transmission	25 ft²	57	-	25 ft²	485	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	14 ft²	17	-	14 ft²	143	-
Floor Transmission	0 ft²	0	-	0 ft²	0	-
Partitions	327 ft²	0	-	327 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	102 W	285	-	0	0	-
Task Lighting	102 W	313	-	0	0	-
Electric Equipment	500 W	1571	-	0	0	-
People	8	1433	960	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	15% / 5%	775	48	0%	0	0
>> Total Zone Loads	-	5944	1008	-	1532	0

TABLE 1.9.B. Envelope Loads For Space "MEDIA ROOM" In Zone "Zone 1"

	Area (ft²)	U-Value (BTU/(hr-ft²-°F))	Shade Coeff.	COOLING TRANS (BTU/hr)	COOLING SOLAR (BTU/hr)	HEATING TRANS (BTU/hr)
N EXPOSURE						
WALL	83	0.056	-	69	-	154
WINDOW 1	25	0.588	0.811	57	577	485
S EXPOSURE						
WALL	93	0.056	-	135	-	173
DOOR	14	0.300	-	17	-	143
E EXPOSURE						
WALL	110	0.056	-	143	-	205
W EXPOSURE						
WALL	110	0.056	-	252	-	205
H EXPOSURE						
ROOF	127	0.040	-	317	-	168

Space Design Load Summary for HVAC-2

Project Name: 172_jojo
Prepared by: EngrTeam

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TABLE 1.10.A. Component Loads For Space "MASTER BATHROOM 2" In Zone "Zone 1"						
	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jun 1800 COOLING OA DB / WB 80.3 °F / 62.4 °F OCCUPIED T-STAT 75.0 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 37.0 °F / 31.1 °F OCCUPIED T-STAT 70.0 °F		
SPACE LOADS	Details	Sensible (BTU/hr)	Latent (BTU/hr)	Details	Sensible (BTU/hr)	Latent (BTU/hr)
Window & Skylight Solar Loads	25 ft²	640	-	25 ft²	-	-
Wall Transmission	496 ft²	830	-	496 ft²	924	-
Roof Transmission	202 ft²	426	-	202 ft²	267	-
Window Transmission	25 ft²	48	-	25 ft²	485	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	36 ft²	35	-	36 ft²	356	-
Floor Transmission	0 ft²	0	-	0 ft²	0	-
Partitions	452 ft²	0	-	452 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	162 W	551	-	0	0	-
Task Lighting	162 W	551	-	0	0	-
Electric Equipment	50 W	171	-	0	0	-
People	2	560	540	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	15% / 5%	572	27	0%	0	0
>> Total Zone Loads	-	4383	567	-	2032	0

TABLE 1.10.B. Envelope Loads For Space "MASTER BATHROOM 2" In Zone "Zone 1"						
	Area (ft²)	U-Value (BTU/(hr-ft²-°F))	Shade Coeff.	COOLING TRANS (BTU/hr)	COOLING SOLAR (BTU/hr)	HEATING TRANS (BTU/hr)
N EXPOSURE						
WALL	80	0.056	-	72	-	149
WINDOW 1	25	0.588	0.811	48	640	485
S EXPOSURE						
WALL	105	0.056	-	135	-	196
E EXPOSURE						
WALL	155	0.056	-	187	-	289
DOOR	18	0.300	-	18	-	178
W EXPOSURE						
WALL	155	0.056	-	436	-	289
DOOR	18	0.300	-	18	-	178
H EXPOSURE						
ROOF	202	0.040	-	426	-	267

Space Design Load Summary for HVAC-2

Project Name: 172_jojo
Prepared by: EngrTeam

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TABLE 1.11.A. Component Loads For Space "LIVING & FOYER ROOM" In Zone "Zone 1"						
	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jul 1700 COOLING OA DB / WB 82.5 °F / 62.8 °F OCCUPIED T-STAT 75.0 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 37.0 °F / 31.1 °F OCCUPIED T-STAT 70.0 °F		
		Sensible	Latent		Sensible	Latent
SPACE LOADS	Details	(BTU/hr)	(BTU/hr)	Details	(BTU/hr)	(BTU/hr)
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	1847 ft²	2929	-	1847 ft²	3440	-
Roof Transmission	410 ft²	1019	-	410 ft²	542	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	102 ft²	149	-	102 ft²	1010	-
Floor Transmission	410 ft²	0	-	410 ft²	0	-
Partitions	904 ft²	0	-	904 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	328 W	921	-	0	0	-
Task Lighting	328 W	1009	-	0	0	-
Electric Equipment	200 W	629	-	0	0	-
People	8	1433	960	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	15% / 5%	1213	48	0%	0	0
>> Total Zone Loads	-	9302	1008	-	4992	0

TABLE 1.11.B. Envelope Loads For Space "LIVING & FOYER ROOM" In Zone "Zone 1"						
	Area	U-Value	Shade	COOLING	COOLING	HEATING
	(ft²)	(BTU/(hr·ft²·°F))	Coeff.	TRANS	SOLAR	TRANS
				(BTU/hr)	(BTU/hr)	(BTU/hr)
N EXPOSURE						
WALL	404	0.056	-	345	-	753
S EXPOSURE						
WALL	264	0.056	-	448	-	492
E EXPOSURE						
WALL	605	0.056	-	813	-	1126
DOOR	36	0.300	-	53	-	356
W EXPOSURE						
WALL	575	0.056	-	1322	-	1070
DOOR	66	0.300	-	96	-	653
H EXPOSURE						
ROOF	410	0.040	-	1019	-	542

System Psychrometrics for HVAC-2

Project Name: 172_jojo
Prepared by: EngrTeam

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June DESIGN COOLING DAY, 1700

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	81.5	0.00793	330	400	1925	-3210
Vent - Return Mixing	Outlet	76.7	0.00976	3119	1255	-	-
Central Cooling Coil	Outlet	58.6	0.00962	3119	1255	60709	2052
Central Heating Coil	Outlet	58.6	0.00962	3119	1255	0	-
Supply Fan	Outlet	58.6	0.00962	3119	1255	0	-
Cold Supply Duct	Outlet	58.6	0.00962	3119	1255	-	-
Zone Air	-	76.1	0.00998	3119	1356	58784	5261
Return Plenum	Outlet	76.1	0.00998	3119	1356	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 = 4743.9 BTU/(hr-CFM)

Site Altitude = 16.0 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	63684	Cooling	58784	76.1	3119	1356	0	0

System Psychrometrics for HVAC-2

Project Name: 172_jojo
Prepared by: EngrTeam

05/17/2025
07:53PM

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	37.0	0.00230	330	400	-11610	0
Vent - Return Mixing	Outlet	66.1	0.00230	3119	483	-	-
Central Cooling Coil	Outlet	66.1	0.00230	3119	483	0	0
Central Heating Coil	Outlet	77.3	0.00230	3119	483	37801	-
Supply Fan	Outlet	77.3	0.00230	3119	483	0	-
Cold Supply Duct	Outlet	77.3	0.00230	3119	483	-	-
Zone Air	-	69.6	0.00230	3119	493	-26191	0
Return Plenum	Outlet	69.6	0.00230	3119	493	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 = 4743.9 BTU/(hr-CFM)

Site Altitude = 16.0 ft

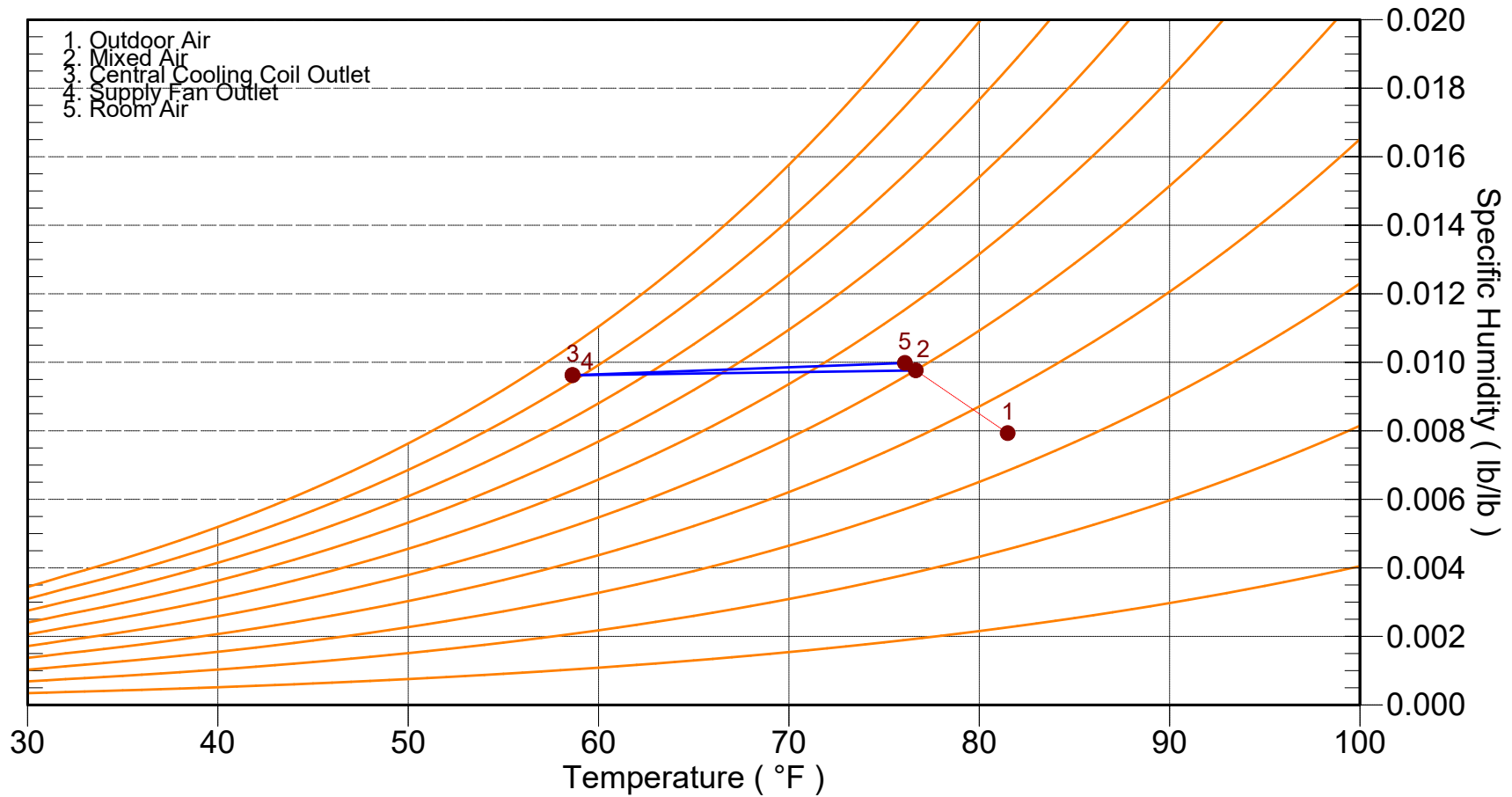
TABLE 2: ZONE DATA

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	-27551	Heating	-26191	69.6	3119	493	0	0

Location: TURLOCK, California

Altitude: 16.0 ft.

Data for: June DESIGN COOLING DAY, 1700



Location: TURLOCK, California
Altitude: 16.0 ft.
Data for: WINTER DESIGN HEATING

