Residential Addition
HVAC Load Calculations

for

Victor Lau
12805 SW 69th CT
Miami, Fl 33156

Elite Software

RHVAC Residential HVAC Loads

DINIESTER MARCELO
LICENSE
No. 73149
STATE OF FLORIDA
PROFESSIONAL ENGINEER

Prepared By:

Diniester Marcelo

Digitally signed by Diniester Marcelo
Date: 2023.11.16 23:55:53 -05'00'

Wednesday, November 8, 2023

Rhvac is an ACCA approved Manual J, D and S computer program.
Calculations are performed per ACCA Manual J 8th Edition, Version 2.50, and ACCA Manual D.

Project Report

General Project Information

Project Title:	Residential Addition
Designed By:	Diniester Marcelo P.E
Project Date:	Monday, November 6, 2023
Client Name:	Victor Lau
Client Address:	12805 SW 69th CT
Client City:	Miami, Fl 33156
Client Comment:	

Design Data

Reference City:		Miami, Florida
Building Orientation:		Front door faces West
Daily Temperature Range:		Low
Latitude:	25	Degrees
Elevation:	7	ft.
Altitude Factor:	1.000	

	Outdoor Dry Bulb	Outdoor Wet Bulb	Outdoor Rel.Hum	Indoor Rel.Hum	Indoor Dry Bulb	Grains Difference
Winter:	47	44.1	n/a	n/a	70	n/a
Summer:	90	77	56%	50%	72	61

Check Figures

Total Building Supply CFM:	632	CFM Per Square ft.:	0.825
Square ft. of Room Area:	767	Square ft. Per Ton:	496
Volume (ft³):	6,762		

Building Loads

Total Heating Required Including Ventilation Air:	15,328	Btuh	15.328	MBH
Total Sensible Gain:	13,911	Btuh	85	%
Total Latent Gain:	2,544	Btuh	15	%
Total Cooling Required Including Ventilation Air:	16,455	Btuh	1.55	Tons (Based On 75% Sensible Capacity)

Notes

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Be sure to select a unit that meets both sensible and latent loads according to the manufacturer's performance data at your design conditions.

Load Preview Report

Scope	Rec Ton	ft.²/Ton	Area	Sen Gain	Lat Gain	Net Gain	Sen Loss	Sys Htg CFM	Sys Clg CFM	Sys Act CFM	Duct Size
Building	1.55	496	767	13,911	2,544	16,455	15,328	199	632	632	
System 1	1.55	496	767	13,911	2,544	16,455	15,328	199	632	632	10x13
Supply Duct Latent					853	853					
Zone 1			767	13,911	1,691	15,602	15,328	199	632	632	10x13
1-Master Room			494	9,664	1,132	10,796	9,684	126	439	439	4--6
2-Master Bath			132	2,821	476	3,297	3,793	49	128	128	2--5
3-Laundry			49	850	0	850	1,275	17	39	39	1--4
4-Corridor			92	577	83	660	575	7	26	26	1--4

Total Building Summary Loads

Component Description	Area Quan	Sen Loss	Lat Gain	Sen Gain	Total Gain
PGTWind: Glazing-eco window single hung, U-value 1.05, SHGC 0.3	156	3,767	0	4,830	4,830
13A-4fcb: Wall-Block, board insulation only, R-4 board insulation, filled core, brick finish, U-value 0.12	636	1,755	0	1,702	1,702
16A-30: Roof/Ceiling-Under Attic with Insulation on Attic Floor (also use for Knee Walls and Partition Ceilings), Unvented Attic, No Radiant Barrier, Any Roofing Material, Any Roof Color, R-30 insulation, U-value 0.032	767	565	0	1,890	1,890
22A-ph: Floor-Slab on grade, No edge insulation, no insulation below floor, any floor cover, passive, heavy moist soil, U-value 1.358	100	3,124	0	0	0
Subtotals for structure:		9,211	0	8,422	8,422
People:	1		200	230	430
Equipment:			0	1,200	1,200
Lighting:	105			358	358
Ductwork:		4,378	853	2,987	3,840
Infiltration: Winter CFM: 69, Summer CFM: 36		1,739	1,491	714	2,205
Ventilation: Winter CFM: 0, Summer CFM: 0		0	0	0	0
Total Building Load Totals:		15,328	2,544	13,911	16,455

Check Figures

Total Building Supply CFM:	632	CFM Per Square ft.:	0.825
Square ft. of Room Area:	767	Square ft. Per Ton:	496
Volume (ft³):	6,762		

Building Loads

Total Heating Required Including Ventilation Air:	15,328	Btuh	15.328	MBH
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Total Latent Gain:	2,544	Btuh	15	%
Total Cooling Required Including Ventilation Air:	16,455	Btuh	1.55	Tons (Based On 75% Sensible Capacity)

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System 1 Ac-03 Summary Loads

Component Description	Area Quan	Sen Loss	Lat Gain	Sen Gain	Total Gain
PGTWind: Glazing-eco window single hung, U-value 1.05, SHGC 0.3	156	3,767	0	4,830	4,830
13A-4fcb: Wall-Block, board insulation only, R-4 board insulation, filled core, brick finish, U-value 0.12	636	1,755	0	1,702	1,702
16A-30: Roof/Ceiling-Under Attic with Insulation on Attic Floor (also use for Knee Walls and Partition Ceilings), Unvented Attic, No Radiant Barrier, Any Roofing Material, Any Roof Color, R-30 insulation, U-value 0.032	767	565	0	1,890	1,890
22A-ph: Floor-Slab on grade, No edge insulation, no insulation below floor, any floor cover, passive, heavy moist soil, U-value 1.358	100	3,124	0	0	0
Subtotals for structure:		9,211	0	8,422	8,422
People:	1		200	230	430
Equipment:			0	1,200	1,200
Lighting:	105			358	358
Ductwork:		4,378	853	2,987	3,840
Infiltration: Winter CFM: 69, Summer CFM: 36		1,739	1,491	714	2,205
Ventilation: Winter CFM: 0, Summer CFM: 0		0	0	0	0
System 1 Ac-03 Load Totals:		15,328	2,544	13,911	16,455

Check Figures

Supply CFM:	632	CFM Per Square ft.:	0.825
Square ft. of Room Area:	767	Square ft. Per Ton:	496
Volume (ft³):	6,762		

System Loads

Total Heating Required Including Ventilation Air:	15,328	Btuh	15.328	MBH
Total Sensible Gain:	13,911	Btuh	85	%
Total Latent Gain:	2,544	Btuh	15	%
Total Cooling Required Including Ventilation Air:	16,455	Btuh	1.55	Tons (Based On 75% Sensible Capacity)

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System 1, Zone 1 Summary Loads (Average Load Procedure for Rooms)

Component Description	Area Quan	Sen Loss	Lat Gain	Sen Gain	Total Gain
PGTWind: Glazing-eco window single hung, U-value 1.05, SHGC 0.3	156	3,767	0	4,830	4,830
13A-4fcb: Wall-Block, board insulation only, R-4 board insulation, filled core, brick finish, U-value 0.12	636	1,755	0	1,702	1,702
16A-30: Roof/Ceiling-Under Attic with Insulation on Attic Floor (also use for Knee Walls and Partition Ceilings), Unvented Attic, No Radiant Barrier, Any Roofing Material, Any Roof Color, R-30 insulation, U-value 0.032	767	565	0	1,890	1,890
22A-ph: Floor-Slab on grade, No edge insulation, no insulation below floor, any floor cover, passive, heavy moist soil, U-value 1.358	100	3,124	0	0	0
Subtotals for structure:		9,211	0	8,422	8,422
People:	1		200	230	430
Equipment:			0	1,200	1,200
Lighting:	105			358	358
Ductwork:		4,378	0	2,987	2,987
Infiltration: Winter CFM: 69, Summer CFM: 36		1,739	1,491	714	2,205
System 1, Zone 1 Load Totals:		15,328	1,691	13,911	15,602

Check Figures

Supply CFM:	632	CFM Per Square ft.:	0.825
Square ft. of Room Area:	767	Square ft. Per Ton:	542
Volume (ft³):	6,762		

Zone Loads

Total Heating Required:	15,328	Btuh	15.328	MBH
Total Sensible Gain:	13,911	Btuh	89	%
Total Latent Gain:	1,691	Btuh	11	%
Total Cooling Required:	15,602	Btuh	1.42	Tons (Based On 75% Sensible Capacity)

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