

FLORIDA ENERGY EFFICIENCY CODE FOR BUILDING CONSTRUCTION

Florida Department of Business and Professional Regulation - Residential Performance Method

Project Name: Pulte OB Canopy 1971-425 Lot 34
Street:
City, State, Zip: Naples, FL, 34120
Owner: Pulte Homes
Design Location: FL, Fort Myers

Builder Name: Pulte Homes
Permit Office: Collier County
Permit Number:
Jurisdiction:
County: Collier (Florida Climate Zone 1)

1. New construction or existing	New (From Plans)
2. Single family or multiple family	Single-family
3. Number of units, if multiple family	1
4. Number of Bedrooms	4
5. Is this a worst case?	No
6. Conditioned floor area above grade (ft²)	2396
Conditioned floor area below grade (ft²)	0
7. Windows (302.9 sqft.)	Description Area
a. U-Factor:	Dbl, U=0.61 132.93 ft²
SHGC:	SHGC=0.35
b. U-Factor:	Dbl, U=0.60 90.00 ft²
SHGC:	SHGC=0.35
c. U-Factor:	Dbl, U=0.44 80.00 ft²
SHGC:	SHGC=0.38
d. U-Factor:	N/A ft²
SHGC:	
Area Weighted Average Overhang Depth:	1.000 ft.
Area Weighted Average SHGC:	0.358
8. Floor Types (2396.0 sqft.)	Insulation Area
a. Slab-On-Grade Edge Insulation	R=0.0 2396.00 ft²
b. N/A	R= ft²
c. N/A	R= ft²

9. Wall Types (2220.5 sqft.)	Insulation Area
a. Concrete Block - Int Insul, Exterior	R=4.1 2220.50 ft²
b. N/A	R= ft²
c. N/A	R= ft²
d. N/A	R= ft²
10. Ceiling Types (2396.0 sqft.)	Insulation Area
a. Under Attic (Vented)	R=30.0 2396.00 ft²
b. N/A	R= ft²
c. N/A	R= ft²
11. Ducts	R ft²
a. Sup: Attic, Ret: Attic, AH: AC 1 Main House	6 250
b. Sup: Attic, Ret: Attic, AH: AC 2 Gallery Offices	6 60
12. Cooling systems	kBtu/hr Efficiency
a. Central Unit	34.6 SEER:16.00
b. Central Unit	14.1 SEER:15.50
13. Heating systems	kBtu/hr Efficiency
a. Electric Strip Heat	30.7 COP:1.00
b. Electric Heat Pump	18.0 HSPF:10.00
14. Hot water systems	
a. Electric	Cap: 50 gallons
b. Conservation features	EF: 0.950
None	
15. Credits	Pstat

Glass/Floor Area: 0.126 Total Proposed Modified Loads: 88.05
Total Baseline Loads: 98.07

PASS

I hereby certify that the plans and specifications covered by this calculation are in compliance with the Florida Energy Code.

PREPARED BY: _____
DATE: _____

I hereby certify that this building, as designed, is in compliance with the Florida Energy Code.

OWNER/AGENT: _____
DATE: _____

Review of the plans and specifications covered by this calculation indicates compliance with the Florida Energy Code. Before construction is completed this building will be inspected for compliance with Section 553.908 Florida Statutes.



BUILDING OFFICIAL: _____
DATE: _____

- Compliance requires certification by the air handler unit manufacturer that the air handler enclosure qualifies as certified factory-sealed in accordance with R403.2.2.1.
- Compliance requires an Air Barrier and Insulation Inspection Checklist in accordance with R402.4.1.1 and an envelope leakage test report in accordance with R402.4.1.2.

PROJECT

Title:	Pulte OB Canopy 1971-425 Lo	Bedrooms:	4	Address Type:	Street Address
Building Type:	User	Conditioned Area:	2396	Lot #	34
Owner:	Pulte Homes	Total Stories:	1	Block/SubDivision:	Orange Blossom
# of Units:	1	Worst Case:	No	PlatBook:	
Builder Name:	Pulte Homes	Rotate Angle:	0	Street:	
Permit Office:	Collier County	Cross Ventilation:		County:	Collier
Jurisdiction:		Whole House Fan:		City, State, Zip:	Naples , FL , 34120
Family Type:	Single-family				
New/Existing:	New (From Plans)				
Comment:					

CLIMATE

✓	Design Location	TMY Site	IECC Zone	Design Temp 97.5 %	Design Temp 2.5 %	Int Design Temp Winter	Int Design Temp Summer	Heating Degree Days	Design Moisture	Daily Temp Range
_____	FL, Fort Myers	FL_FORT_MYERS_PAG	2	46	93	70	75	205	58	Medium

BLOCKS

Number	Name	Area	Volume
1	Block1	1971	18389.4
2	Block2	425	3965.3

SPACES

Number	Name	Area	Volume	Kitchen	Occupants	Bedrooms	Infil ID	Finished	Cooled	Heated
1	AC 1 Main House	1971	18389.4	Yes	5	4	1	Yes	Yes	Yes
2	AC 2 Gallery Offices	425	3965.3	No	4	0	1	Yes	Yes	Yes

FLOORS

✓	#	Floor Type	Space	Perimeter	Perimeter R-Value	Area	Joist R-Value	Tile	Wood	Carpet
_____	1	Slab-On-Grade Edge Insulatio	AC 1 Main House	166 ft	0	1971 ft²	----	0	0	1
_____	2	Slab-On-Grade Edge Insulatio	AC 2 Gallery Offic	74 ft	0	425 ft²	----	0	0	1

ROOF

✓	#	Type	Materials	Roof Area	Gable Area	Roof Color	Solar Absor.	SA Tested	Emitt	Emitt Tested	Deck Insul.	Pitch (deg)
_____	1	Hip	Flat tile/slate	2595 ft²	0 ft²	Light	0.6	No	0.9	No	1	22.6

ATTIC

✓	#	Type	Ventilation	Vent Ratio (1 in)	Area	RBS	IRCC
_____	1	Full attic	Vented	300	2396 ft²	N	N

CEILING

✓	#	Ceiling Type	Space	R-Value	Ins Type	Area	Framing Frac	Truss Type
✓	1	Under Attic (Vented)	AC 1 Main House	30	Blown	1971 ft²	0.11	Wood
✓	2	Under Attic (Vented)	AC 2 Gallery Offic	30	Blown	425 ft²	0.11	Wood

WALLS

✓	#	Ornt	Adjacent To	Wall Type	Space	Cavity R-Value	Width Ft	In	Height Ft	In	Area	Sheathing R-Value	Framing Fraction	Solar Absor.	Below Grade%
✓	1	SW	Exterior	Concrete Block - Int Insu	AC 1 Main Ho	4.1	6	0	9.33	0	56.0 ft²	0.4	0	0.4	0
✓	2	SE	Exterior	Concrete Block - Int Insu	AC 1 Main Ho	4.1	5	0	9.33	0	46.7 ft²	0.4	0	0.4	0
✓	3	SW	Exterior	Concrete Block - Int Insu	AC 1 Main Ho	4.1	14	0	9.33	0	130.6 ft²	0.4	0	0.4	0
✓	4	NW	Exterior	Concrete Block - Int Insu	AC 1 Main Ho	4.1	18	0	9.33	0	167.9 ft²	0.4	0	0.4	0
✓	5	NW	Exterior	Concrete Block - Int Insu	AC 1 Main Ho	4.1	14	0	9.33	0	130.6 ft²	0.4	0	0.4	0
✓	6	NW	Exterior	Concrete Block - Int Insu	AC 1 Main Ho	4.1	8	0	9.33	0	74.6 ft²	0.4	0	0.4	0
✓	7	NW	Exterior	Concrete Block - Int Insu	AC 1 Main Ho	4.1	17	0	9.33	0	158.6 ft²	0.4	0	0.4	0
✓	8	NE	Exterior	Concrete Block - Int Insu	AC 1 Main Ho	4.1	17.5	0	9.33	0	163.3 ft²	0.4	0	0.4	0
✓	9	NE	Exterior	Concrete Block - Int Insu	AC 1 Main Ho	4.1	13.5	0	9.33	0	126.0 ft²	0.4	0	0.4	0
✓	10	NE	Exterior	Concrete Block - Int Insu	AC 1 Main Ho	4.1	9	0	9.33	0	84.0 ft²	0.4	0	0.4	0
✓	11	SE	Exterior	Concrete Block - Int Insu	AC 1 Main Ho	4.1	7	0	9.33	0	65.3 ft²	0.4	0	0.4	0
✓	12	SE	Exterior	Concrete Block - Int Insu	AC 1 Main Ho	4.1	10	0	9.33	0	93.3 ft²	0.4	0	0.4	0
✓	13	SE	Exterior	Concrete Block - Int Insu	AC 1 Main Ho	4.1	13	0	9.33	0	121.3 ft²	0.4	0	0.4	0
✓	14	SE	Exterior	Concrete Block - Int Insu	AC 1 Main Ho	4.1	12	0	9.33	0	112.0 ft²	0.4	0	0.4	0
✓	15	NW	Exterior	Concrete Block - Int Insu	AC 2 Gallery	4.1	14	0	9.33	0	130.6 ft²	0.4	0	0.4	0
✓	16	SW	Exterior	Concrete Block - Int Insu	AC 2 Gallery	4.1	20	0	9.33	0	186.6 ft²	0.4	0	0.4	0
✓	17	SE	Exterior	Concrete Block - Int Insu	AC 2 Gallery	4.1	14	0	9.33	0	130.6 ft²	0.4	0	0.4	0
✓	18	SE	Exterior	Concrete Block - Int Insu	AC 2 Gallery	4.1	11	0	9.33	0	102.6 ft²	0.4	0	0.4	0
✓	19	NW	Exterior	Concrete Block - Int Insu	AC 2 Gallery	4.1	8	0	9.33	0	74.6 ft²	0.4	0	0.4	0
✓	20	SE	Exterior	Concrete Block - Int Insu	AC 2 Gallery	4.1	7	0	9.33	0	65.3 ft²	0.4	0	0.4	0

DOORS

✓	#	Ornt	Door Type	Space	Storms	U-Value	Width Ft	In	Height Ft	In	Area
✓	1	SW	Insulated	AC 1 Main Ho	None	.4	3		8		24 ft²

WINDOWS

Orientation shown is the entered, Proposed orientation.

✓	#	Ornt	Wall ID	Frame	Panes	NFRC	U-Factor	SHGC	Area	Overhang Depth	Separation	Int Shade	Screening
✓	1	SW	3	Metal	Low-E Double	Yes	0.61	0.35	39.0 ft²	1 ft 0 in	1.33 ft 0 i	None	None
✓	2	NW	5	Metal	Low-E Double	Yes	0.61	0.35	13.1 ft²	1 ft 0 in	1.33 ft 0 i	None	None
✓	3	NW	6	Metal	Low-E Double	Yes	0.61	0.35	16.2 ft²	1 ft 0 in	1.33 ft 0 i	None	None
✓	4	NE	8	Metal	Low-E Double	Yes	0.6	0.35	64.0 ft²	1 ft 0 in	1.33 ft 0 i	None	None
✓	5	NE	9	Metal	Low-E Double	Yes	0.61	0.35	32.3 ft²	1 ft 0 in	1.33 ft 0 i	None	None
✓	6	SE	13	Metal	Low-E Double	Yes	0.61	0.35	16.2 ft²	1 ft 0 in	1.33 ft 0 i	None	None
✓	7	SE	14	Metal	Low-E Double	Yes	0.61	0.35	16.2 ft²	1 ft 0 in	1.33 ft 0 i	None	None
✓	8	SW	16	Metal	Low-E Double	Yes	0.6	0.35	26.0 ft²	1 ft 0 in	1.33 ft 0 i	None	None
✓	9	SW	16	Metal	Low-E Double	Yes	0.44	0.38	80.0 ft²	1 ft 0 in	1.33 ft 0 i	None	None

INFILTRATION

#	Scope	Method	SLA	CFM 50	ELA	EqLA	ACH	ACH 50
1	Wholehouse	Proposed ACH(50)	.000296	1862.9	102.27	192.33	.2223	5

HEATING SYSTEM

✓	#	System Type	Subtype	Efficiency	Capacity	Block	Ducts
_____	1	Electric Strip Heat	None	COP:1	30.7 kBtu/hr	1	sys#1
_____	2	Electric Heat Pump	None	HSPF:10	18 kBtu/hr	2	sys#2

COOLING SYSTEM

✓	#	System Type	Subtype	Efficiency	Capacity	Air Flow	SHR	Block	Ducts
_____	1	Central Unit	Split	SEER: 16	34.6 kBtu/hr	1038 cfm	0.77	1	sys#1
_____	2	Central Unit	Split	SEER: 15.5	14.1 kBtu/hr	423 cfm	0.75	2	sys#2

HOT WATER SYSTEM

✓	#	System Type	SubType	Location	EF	Cap	Use	SetPnt	Conservation
_____	1	Electric	None	AC 2 Gallery Office	100%	50 gal	70 gal	120 deg	None

SOLAR HOT WATER SYSTEM

✓	FSEC Cert #	Company Name	System Model #	Collector Model #	Collector Area	Storage Volume	FEF
_____	None	None			ft ²		

DUCTS

✓	#	Location	---- Supply ---- R-Value Area	---- Return ---- Location Area	Leakage Type	Air Handler	CFM 25 TOT	CFM25 OUT	QN	RLF	HVAC # Heat Cool
_____	1	Attic	6 250 ft ²	Attic 15 ft ²	Default Leakage	AC 1 Main	(Default)	(Default)			1 1
_____	2	Attic	6 60 ft ²	Attic 20 ft ²	Default Leakage	AC 2 Galler	(Default)	(Default)			2 2

TEMPERATURES

Programable Thermostat: Y												Ceiling Fans:												
Cooling	<input checked="" type="checkbox"/>	Jan	<input checked="" type="checkbox"/>	Feb	<input checked="" type="checkbox"/>	Mar	<input type="checkbox"/>	Apr	<input type="checkbox"/>	May	<input checked="" type="checkbox"/>	Jun	<input checked="" type="checkbox"/>	Jul	<input checked="" type="checkbox"/>	Aug	<input checked="" type="checkbox"/>	Sep	<input type="checkbox"/>	Oct	<input checked="" type="checkbox"/>	Nov	<input checked="" type="checkbox"/>	Dec
Heating	<input checked="" type="checkbox"/>	Jan	<input checked="" type="checkbox"/>	Feb	<input checked="" type="checkbox"/>	Mar	<input type="checkbox"/>	Apr	<input type="checkbox"/>	May	<input checked="" type="checkbox"/>	Jun	<input checked="" type="checkbox"/>	Jul	<input checked="" type="checkbox"/>	Aug	<input checked="" type="checkbox"/>	Sep	<input type="checkbox"/>	Oct	<input checked="" type="checkbox"/>	Nov	<input checked="" type="checkbox"/>	Dec
Venting	<input checked="" type="checkbox"/>	Jan	<input checked="" type="checkbox"/>	Feb	<input checked="" type="checkbox"/>	Mar	<input checked="" type="checkbox"/>	Apr	<input type="checkbox"/>	May	<input checked="" type="checkbox"/>	Jun	<input checked="" type="checkbox"/>	Jul	<input checked="" type="checkbox"/>	Aug	<input checked="" type="checkbox"/>	Sep	<input checked="" type="checkbox"/>	Oct	<input checked="" type="checkbox"/>	Nov	<input checked="" type="checkbox"/>	Dec



Thermostat Schedule: HERS 2006 Reference		Hours											
Schedule Type		1	2	3	4	5	6	7	8	9	10	11	12
Cooling (WD)	AM	78	78	78	78	78	78	78	78	80	80	80	80
	PM	80	80	78	78	78	78	78	78	78	78	78	78
Cooling (WEH)	AM	78	78	78	78	78	78	78	78	78	78	78	78
	PM	78	78	78	78	78	78	78	78	78	78	78	78
Heating (WD)	AM	66	66	66	66	66	68	68	68	68	68	68	68
	PM	68	68	68	68	68	68	68	68	68	68	66	66
Heating (WEH)	AM	66	66	66	66	66	68	68	68	68	68	68	68
	PM	68	68	68	68	68	68	68	68	68	68	66	66

TABLE 402.4.1.1**AIR BARRIER AND INSULATION INSPECTION COMPONENT CRITERIA**

<div> <div> Project Name: Pulte OB Canopy 1971-425 Lot 34 Street: City, State, Zip: Naples , FL , 34120 Owner: Pulte Homes Design Location: FL, Fort Myers </div> <div> Builder Name: Pulte Homes Permit Office: CollierCounty Permit Number: Jurisdiction: </div> </div>		
COMPONENT	CRITERIA	CHECK
Air barrier and thermal barrier	A continuous air barrier shall be installed in the building envelope. Exterior thermal envelope contains a continuous barrier. Breaks or joints in the air barrier shall be sealed. Air-permeable insulation shall not be used as a sealing material.	
Ceiling/attic	The air barrier in any dropped ceiling/soffit shall be aligned with the insulation and any gaps in the air barrier shall be sealed. Access openings, drop down stairs or knee wall doors to unconditioned attic spaces shall be sealed.	
Walls	Corners and headers shall be insulated and the junction of the foundation and sill plate shall be sealed. The junction of the top plate and the top or exterior walls shall be sealed. Exterior thermal envelope insulation for framed walls shall be installed in substantial contact and continuous alignment with the air barrier. Knee walls shall be sealed.	
Windows, skylights and doors	The space between window/door jambs and framing and skylights and framing shall be sealed.	
Rim joists	Rim joists are insulated and include an air barrier.	
Floors (including above-garage and cantilevered floors)	Insulation shall be installed to maintain permanent contact with underside of subfloor decking. The air barrier shall be installed at any exposed edge of insulation.	
Crawl space walls	Where provided in lieu of floor insulation, insulation shall be permanently attached to the crawlspace walls. Exposed earth in unvented crawl spaces shall be covered with a Class I vapor retarder with overlapping joints taped.	
Shafts, penetrations	Duct shafts, utility penetrations, and flue shaft openings to exterior or unconditioned space shall be sealed.	
Narrow cavities	Batts in narrow cavities shall be cut to fit, or narrow cavities shall be filled by insulation that on installation readily conforms to the available cavity spaces.	
Garage separation	Air sealing shall be provided between the garage and conditioned spaces.	
Recessed lighting	Recessed light fixtures installed in the building thermal envelope shall be air tight, IC rated, and sealed to the drywall.	
Plumbing and wiring	Batt insulation shall be cut neatly to fit around wiring and plumbing in exterior walls, or insulation that on installation readily conforms to available space shall extend behind piping and wiring.	
Shower/tub on exterior wall	Exterior walls adjacent to showers and tubs shall be insulated and the air barrier installed separating them from the showers and tubs.	
Electrical/phone box on	The air barrier shall be installed behind electrical or communication boxes or air sealed boxes shall be installed.	
HVAC register boots	HVAC register boots that penetrate building thermal envelope shall be sealed to the sub-floor or drywall.	
Fireplace	An air barrier shall be installed on fireplace walls. Fireplaces shall have gasketed doors	

ENERGY PERFORMANCE LEVEL (EPL) DISPLAY CARD

ESTIMATED ENERGY PERFORMANCE INDEX* = 90

The lower the EnergyPerformance Index, the more efficient the home.

, Naples, FL, 34120

1. New construction or existing	New (From Plans)	9. Wall Types	Insulation	Area
2. Single family or multiple family	Single-family	a. Concrete Block - Int Insul, Exterior	R=4.1	2220.50 ft ²
3. Number of units, if multiple family	1	b. N/A	R=	ft ²
4. Number of Bedrooms	4	c. N/A	R=	ft ²
5. Is this a worst case?	No	d. N/A	R=	ft ²
6. Conditioned floor area (ft ²)	2396	10. Ceiling Types	Insulation	Area
7. Windows**	Description	a. Under Attic (Vented)	R=30.0	2396.00 ft ²
a. U-Factor:	Dbl, U=0.61	b. N/A	R=	ft ²
SHGC:	SHGC=0.35	c. N/A	R=	ft ²
b. U-Factor:	Dbl, U=0.60	11. Ducts	R	ft ²
SHGC:	SHGC=0.35	a. Sup: Attic, Ret: Attic, AH: AC 1 Main House	6	250
c. U-Factor:	Dbl, U=0.44	b. Sup: Attic, Ret: Attic, AH: AC 2 Gallery Offices	6	60
SHGC:	SHGC=0.38	12. Cooling systems	kBtu/hr	Efficiency
d. U-Factor:	N/A	a. Central Unit	34.6	SEER:16.00
SHGC:		b. Central Unit	14.1	SEER:15.50
Area Weighted Average Overhang Depth:	1.000 ft.	13. Heating systems	kBtu/hr	Efficiency
Area Weighted Average SHGC:	0.358	a. Electric Strip Heat	30.7	COP:1.00
8. Floor Types	Insulation	b. Electric Heat Pump	18.0	HSPF:10.00
a. Slab-On-Grade Edge Insulation	R=0.0	14. Hot water systems		
b. N/A	R=	a. Electric		Cap: 50 gallons
c. N/A	R=	b. Conservation features		EF: 0.95
		None		
		15. Credits		Pstat

I certify that this home has complied with the Florida Energy Efficiency Code for Building Construction through the above energy saving features which will be installed (or exceeded) in this home before final inspection. Otherwise, a new EPL Display Card will be completed based on installed Code compliant features.

Builder Signature: _____ Date: _____

Address of New Home: _____ City/FL Zip: _____



*Note: This is not a Building Energy Rating. If your Index is below 70, your home may qualify for energy efficient mortgage (EEM) incentives if you obtain a Florida EnergyGauge Rating. Contact the EnergyGauge Hotline at (321) 638-1492 or see the EnergyGauge web site at energygauge.com for information and a list of certified Raters. For information about the Florida Building Code, Energy Conservation, contact the Florida Building Commission's support staff.

**Label required by Section R303.1.3 of the Florida Building Code, Energy Conservation, if not DEFAULT.

*Pulte OB Canopy 1971-425 Lot 34
HVAC Load Calculations*

for

Pulte Homes

Naples, FL 34120



RHVAC RESIDENTIAL
HVAC LOADS

Prepared By:

Greg Bolinsky
Engineered Air, LLC
2520 N Andrews Ave. Ext
Pompano Beach, FL 33064
954-449-1600
Friday, September 29, 2017

Rhvac is an ACCA approved Manual J and Manual D computer program.
Calculations are performed per ACCA Manual J 8th Edition, Version 2, and ACCA Manual D.

Rhvac - Residential & Light Commercial HVAC Loads
Engineered Air, LLC
Pompano Beach, FL 33064


Project Report

General Project Information

Project Title: Pulte OB Canopy 1971-425 Lot 34
 Designed By: Greg Bolinsky
 Project Date: Tuesday, December 13, 2016
 Client Name: Pulte Homes
 Client City: Naples, FL 34120
 Company Name: Engineered Air, LLC
 Company Representative: Greg Bolinsky
 Company Address: 2520 N Andrews Ave. Ext
 Company City: Pompano Beach, FL 33064
 Company Phone: 954-449-1600
 Company Fax: 954-973-1883

Design Data

Reference City: Fort Myers AP, Florida
 Building Orientation: House faces Southwest
 Daily Temperature Range: Medium
 Latitude: 26 Degrees
 Elevation: 15 ft.
 Altitude Factor: 0.999

	Outdoor <u>Dry Bulb</u>	Outdoor <u>Wet Bulb</u>	Outdoor <u>Rel.Hum</u>	Indoor <u>Rel.Hum</u>	Indoor <u>Dry Bulb</u>	Grains <u>Difference</u>
Winter:	47	44.1	n/a	n/a	70	n/a
Summer:	93	77	49%	50%	75	50

Check Figures

Total Building Supply CFM:	1,554	CFM Per Square ft.:	0.648
Square ft. of Room Area:	2,396	Square ft. Per Ton:	677
Volume (ft³):	22,355		

Building Loads

Total Heating Required Including Ventilation Air:	21,048 Btuh	21.048 MBH
Total Sensible Gain:	34,909 Btuh	82 %
Total Latent Gain:	7,562 Btuh	18 %
Total Cooling Required Including Ventilation Air:	42,471 Btuh	3.54 Tons (Based On Sensible + Latent)

Notes

Rhvac is an ACCA approved Manual J and Manual D computer program.
 Calculations are performed per ACCA Manual J 8th Edition, Version 2, and ACCA Manual D.
 All computed results are estimates as building use and weather may vary.
 Be sure to select a unit that meets both sensible and latent loads according to the manufacturer's performance data at your design conditions.



Total Building Summary Loads

Component Description	Area Quan	Sen Loss	Lat Gain	Sen Gain	Total Gain
Pulte Low E SH: Glazing-Pulte Single Hung Operable Window, u-value 0.61, SHGC 0.35	132.9	1,867	0	4,549	4,549
Pulte Low E SGD: Glazing-Sliding Glass Door- Low E- Double Pane, u-value 0.6, SHGC 0.35	64	883	0	2,257	2,257
Pulte Low E FD: Glazing-French Door- Low E- Double Pane, u-value 0.6, SHGC 0.35	26	358	0	862	862
Pulte Low E FG: Glazing-Fixed Glass- Side Lite- Transom- Low E- Double Pane, u-value 0.44, SHGC 0.38	80	810	0	2,594	2,594
11J: Door-Metal - Fiberglass Core	24	331	0	418	418
13A-4ocs: Wall-Block, board insulation only, R-4 board insulation, open core, siding finish	1893.6	6,229	0	4,957	4,957
12B-0sw: Part-Frame, R-11 insulation in 2 x 4 stud cavity, no board insulation, siding finish, wood studs	9.3	14	0	14	14
16D-30: Roof/Ceiling-Under Attic with Insulation on Attic Floor (also use for Knee Walls and Partition Ceilings), Vented Attic, No Radiant Barrier, Dark Tile, Slate or Concrete, R-30 insulation	2396	1,763	0	2,530	2,530
22A-pl-c: Floor-Slab on grade, No edge insulation, no insulation below floor, carpet covering, passive, light dry soil	240	5,458	0	0	0
Subtotals for structure:		17,713	0	18,181	18,181
People:	10		2,800	2,400	5,200
Equipment:			2,925	6,300	9,225
Lighting:	1100			3,751	3,751
Ductwork:		1,263	454	2,095	2,548
Infiltration: Winter CFM: 82, Summer CFM: 41		2,072	1,383	812	2,195
Ventilation: Winter CFM: 0, Summer CFM: 0		0	0	0	0
AED Excursion:		0	0	1,371	1,371
Total Building Load Totals:		21,048	7,562	34,909	42,471

Check Figures

Total Building Supply CFM:	1,554	CFM Per Square ft.:	0.648
Square ft. of Room Area:	2,396	Square ft. Per Ton:	677
Volume (ft³):	22,355		

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All computed results are estimates as building use and weather may vary.
Be sure to select a unit that meets both sensible and latent loads according to the manufacturer's performance data at your design conditions.



System 1 AC 1 - Main House Summary Loads

Component Description	Area Quan	Sen Loss	Lat Gain	Sen Gain	Total Gain
Pulte Low E SH: Glazing-Pulte Single Hung Operable Window, u-value 0.61, SHGC 0.35	132.9	1,867	0	4,549	4,549
Pulte Low E SGD: Glazing-Sliding Glass Door- Low E- Double Pane, u-value 0.6, SHGC 0.35	64	883	0	2,257	2,257
11J: Door-Metal - Fiberglass Core	24	331	0	418	418
13A-4ocs: Wall-Block, board insulation only, R-4 board insulation, open core, siding finish	1309.2	4,306	0	3,427	3,427
12B-0sw: Part-Frame, R-11 insulation in 2 x 4 stud cavity, no board insulation, siding finish, wood studs	9.3	14	0	14	14
16D-30: Roof/Ceiling-Under Attic with Insulation on Attic Floor (also use for Knee Walls and Partition Ceilings), Vented Attic, No Radiant Barrier, Dark Tile, Slate or Concrete, R-30 insulation	1971	1,451	0	2,082	2,082
22A-pl-c: Floor-Slab on grade, No edge insulation, no insulation below floor, carpet covering, passive, light dry soil	166	3,775	0	0	0
Subtotals for structure:		12,627	0	12,747	12,747
People:	6		1,680	1,440	3,120
Equipment:			2,500	4,700	7,200
Lighting:	1000			3,410	3,410
Ductwork:		915	339	1,466	1,805
Infiltration: Winter CFM: 67, Summer CFM: 34		1,703	1,138	668	1,806
Ventilation: Winter CFM: 0, Summer CFM: 0		0	0	0	0
System 1 AC 1 - Main House Load Totals:		15,245	5,657	24,431	30,088

Check Figures

Supply CFM:	1,087	CFM Per Square ft.:	0.552
Square ft. of Room Area:	1,971	Square ft. Per Ton:	786
Volume (ft³):	18,389		

System Loads

Total Heating Required Including Ventilation Air:	15,245 Btuh	15.245 MBH
Total Sensible Gain:	24,431 Btuh	81 %
Total Latent Gain:	5,657 Btuh	19 %
Total Cooling Required Including Ventilation Air:	30,088 Btuh	2.51 Tons (Based On Sensible + Latent)

Notes

Rhvac is an ACCA approved Manual J and Manual D computer program.
Calculations are performed per ACCA Manual J 8th Edition, Version 2, and ACCA Manual D.
All computed results are estimates as building use and weather may vary.
Be sure to select a unit that meets both sensible and latent loads according to the manufacturer's performance data at your design conditions.

Rhvac - Residential & Light Commercial HVAC Loads
Engineered Air, LLC
Pompano Beach, FL 33064


System 2 AC 2 - Gallery & Offices Summary Loads

Component Description	Area Quan	Sen Loss	Lat Gain	Sen Gain	Total Gain
Pulte Low E FD: Glazing-French Door- Low E- Double Pane, u-value 0.6, SHGC 0.35	26	358	0	862	862
Pulte Low E FG: Glazing-Fixed Glass- Side Lite- Transom- Low E- Double Pane, u-value 0.44, SHGC 0.38	80	810	0	2,594	2,594
13A-4ocs: Wall-Block, board insulation only, R-4 board insulation, open core, siding finish	584.4	1,923	0	1,530	1,530
16D-30: Roof/Ceiling-Under Attic with Insulation on Attic Floor (also use for Knee Walls and Partition Ceilings), Vented Attic, No Radiant Barrier, Dark Tile, Slate or Concrete, R-30 insulation	425	312	0	448	448
22A-pl-c: Floor-Slab on grade, No edge insulation, no insulation below floor, carpet covering, passive, light dry soil	74	1,683	0	0	0
Subtotals for structure:		5,086	0	5,434	5,434
People:	4		1,120	960	2,080
Equipment:			425	1,600	2,025
Lighting:	100			341	341
Ductwork:		348	114	629	743
Infiltration: Winter CFM: 15, Summer CFM: 7		369	245	144	389
Ventilation: Winter CFM: 0, Summer CFM: 0		0	0	0	0
AED Excursion:		0	0	1,371	1,371
System 2 AC 2 - Gallery & Offices Load Totals:		5,803	1,904	10,478	12,383

Check Figures

Supply CFM:	466	CFM Per Square ft.:	1.097
Square ft. of Room Area:	425	Square ft. Per Ton:	412
Volume (ft³):	3,966		

System Loads

Total Heating Required Including Ventilation Air:	5,803 Btuh	5.803 MBH
Total Sensible Gain:	10,478 Btuh	85 %
Total Latent Gain:	1,904 Btuh	15 %
Total Cooling Required Including Ventilation Air:	12,383 Btuh	1.03 Tons (Based On Sensible + Latent)

Notes

Rhvac is an ACCA approved Manual J and Manual D computer program.
Calculations are performed per ACCA Manual J 8th Edition, Version 2, and ACCA Manual D.
All computed results are estimates as building use and weather may vary.
Be sure to select a unit that meets both sensible and latent loads according to the manufacturer's performance data at your design conditions.



Equipment Data - System 1 - AC 1 - Main House

Cooling

System Type:	Standard Air Conditioner
Outdoor Model:	14ACX-036-230A**
Indoor Model:	CBA27UHE-036-230*+TDR
Tradename:	LENNOX
Outdoor Manufacturer:	LENNOX INDUSTRIES, INC.
AHRI Reference No.:	10259478
Capacity:	34600
Efficiency:	16 SEER

Heating

System Type:	Electric Resistance
Model:	9 KW
Capacity:	0
Efficiency:	0%

This system's equipment was selected in accordance with ACCA Manual S.

Manual S equipment sizing data: SODB: 93F, SOWB: 77F, WODB: 47F, SIDB: 75F, SIRH: 50%, WIDB: 70F, Sen. gain: 24,431 Btuh, Lat. gain: 5,657 Btuh, Sen. loss: 15,245 Btuh, Entering clg. coil DB: 75.4F, Entering clg. coil WB: 62.7F, Entering htg. coil DB: 68.5F, Clg. coil TD: 20F, Htg. coil TD: 70F, Req. clg. airflow: 1087 CFM, Req. htg. airflow: 194 CFM



Equipment Data - System 2 - AC 2 - Gallery & Offices

Cooling

System Type:	Air Source Heat Pump
Outdoor Model:	SUZ-KA15NA
Indoor Model:	SEZ-KD15NA
Tradename:	MR. SLIM
Outdoor Manufacturer:	MITSUBISHI ELECTRIC COOLING & HEATING
Description:	Air Source Heat Pump
AHRI Reference No.:	3837469
Capacity:	14100
Efficiency:	15.5 SEER

Heating

System Type:	Air Source Heat Pump
Model:	SUZ-KA15NA
Tradename:	MR. SLIM
Manufacturer:	MITSUBISHI ELECTRIC COOLING & HEATING
Description:	Air Source Heat Pump
Capacity:	18000
Efficiency:	10 HSPF

This system's equipment was selected in accordance with ACCA Manual S.

Manual S equipment sizing data: SODB: 93F, SOWB: 77F, WODB: 47F, SIDB: 75F, SIRH: 50%, WIDB: 70F, Sen. gain: 10,478 Btuh, Lat. gain: 1,904 Btuh, Sen. loss: 5,803 Btuh, Entering clg. coil DB: 75.4F, Entering clg. coil WB: 62.7F, Entering htg. coil DB: 68.5F, Clg. coil TD: 20F, Htg. coil TD: 70F, Req. clg. airflow: 466 CFM, Req. htg. airflow: 74 CFM