

Residential System Sizing Calculation

Summary

Dennis & Rebecca Mouras
735 SW Sterling Terrace
High Springs, FL 32643

Project Title:
Mouras Residence

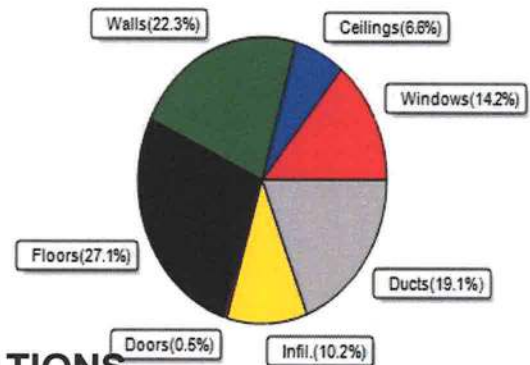


Location for weather data: Gainesville, FL - Defaults: Latitude(29.7) Altitude(152 ft.) Temp Range(M)			
Humidity data: Interior RH (50%) Outdoor wet bulb (77F) Humidity difference(51gr.)			
Winter design temperature(TMY3 99%)	30 F	Summer design temperature(TMY3 99%)	94 F
Winter setpoint	70 F	Summer setpoint	75 F
Winter temperature difference	40 F	Summer temperature difference	19 F
Total heating load calculation	63570 Btuh	Total cooling load calculation	54791 Btuh
Submitted heating capacity	% of calc Btuh	Submitted cooling capacity	% of calc Btuh
Total (Electric Heat Pump)	100.0 63570	Sensible (SHR = 0.70)	83.2 38354
Heat Pump + Auxiliary(0.0kW)	100.0 63570	Latent	189.7 16437
		Total (Electric Heat Pump)	100.0 54791

WINTER CALCULATIONS

Winter Heating Load (for 3942 sqft)

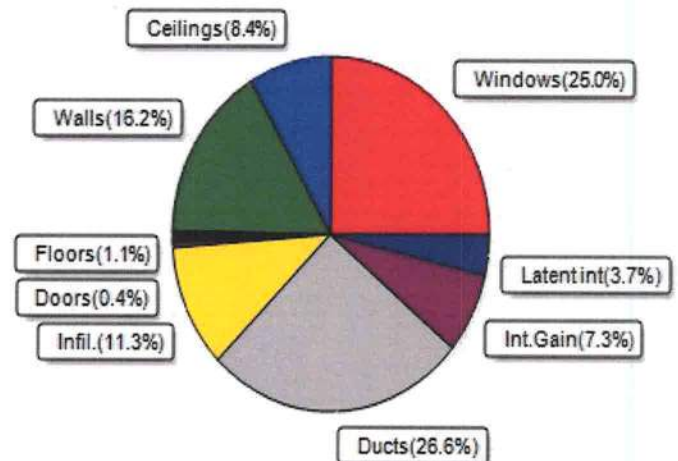
Load component		Load	
Window total	625 sqft	8998	Btuh
Wall total	3988 sqft	14158	Btuh
Door total	18 sqft	327	Btuh
Ceiling total	4140 sqft	4203	Btuh
Floor total	See detail report	17231	Btuh
Infiltration	149 cfm	6507	Btuh
Duct loss		12146	Btuh
Subtotal		63570	Btuh
Ventilation	Ex:0 cfm; Sup:0 cfm	0	Btuh
TOTAL HEAT LOSS		63570	Btuh



SUMMER CALCULATIONS

Summer Cooling Load (for 3942 sqft)

Load component		Load	
Window total	625 sqft	13717	Btuh
Wall total	3988 sqft	8878	Btuh
Door total	18 sqft	245	Btuh
Ceiling total	4140 sqft	4623	Btuh
Floor total		611	Btuh
Infiltration	111 cfm	2318	Btuh
Internal gain		4000	Btuh
Duct gain		11734	Btuh
Sens. Ventilation	Ex:0 cfm; Sup:0 cfm	0	Btuh
Blower Load		0	Btuh
Total sensible gain		46125	Btuh
Latent gain(ducts)		2820	Btuh
Latent gain(infiltration)		3846	Btuh
Latent gain(ventilation)		0	Btuh
Latent gain(internal/occupants/other)		2000	Btuh
Total latent gain		8666	Btuh
TOTAL HEAT GAIN		54791	Btuh



8th Edition

EnergyGauge® System Sizing

PREPARED BY: _____

DATE: _____ 3 / 1 / 2023

W. C. [Signature]

System Sizing Calculations - Winter

Residential Load - Whole House Component Details

Dennis & Rebecca Mouras
735 SW Sterling Terrace
High Springs, FL 32643

Project Title:
Mouras Residence
Building Type: User

2/24/2023

Reference City: Gainesville, FL (Defaults) Winter Temperature Difference: 40.0 °F (TMY3 99%)
Winter Setpoint: 70 °F (Required Manual J default)

Component Loads for Whole House

Window	Panes/Type	Frame	U	Orientation	Area(sqft)	X	HTM=	Load
1	2, NFRC 0.25	Vinyl	0.36	NW	136.0		14.4	1958 Btuh
2	2, NFRC 0.25	Vinyl	0.36	NW	7.5		14.4	108 Btuh
3	2, NFRC 0.25	TIM	0.36	NW	40.0		14.4	576 Btuh
4	2, NFRC 0.25	Vinyl	0.36	SW	45.3		14.4	653 Btuh
5	2, NFRC 0.25	Vinyl	0.36	NW	17.5		14.4	252 Btuh
6	2, NFRC 0.25	Vinyl	0.36	NW	52.5		14.4	756 Btuh
7	2, NFRC 0.25	Vinyl	0.36	SW	22.0		14.4	317 Btuh
8	2, NFRC 0.25	Vinyl	0.36	SW	8.0		14.4	115 Btuh
9	2, NFRC 0.25	TIM	0.36	NE	24.0		14.4	346 Btuh
10	2, NFRC 0.25	Vinyl	0.36	SE	16.0		14.4	230 Btuh
11	2, NFRC 0.25	Metal	0.36	SE	96.0		14.4	1382 Btuh
12	2, NFRC 0.25	Vinyl	0.36	SE	21.0		14.4	302 Btuh
13	2, NFRC 0.25	Vinyl	0.36	SE	21.0		14.4	302 Btuh
14	2, NFRC 0.25	Vinyl	0.36	NW	52.5		14.4	756 Btuh
15	2, NFRC 0.25	Vinyl	0.36	NW	17.5		14.4	252 Btuh
16	2, NFRC 0.25	Vinyl	0.36	SW	48.0		14.4	691 Btuh
Window Total					624.8(sqft)			8998 Btuh
Walls	Type	Ornt.	Ueff.	R-Value (Cav/Sh)	Area	X	HTM=	Load
1	Frame - Wood	- Ext	(0.089)	13.0/0.0	196		3.55	696 Btuh
2	Frame - Wood	- Ext	(0.089)	13.0/0.0	65		3.55	230 Btuh
3	Frame - Wood	- Ext	(0.089)	13.0/0.0	94		3.55	334 Btuh
4	Frame - Wood	- Ext	(0.089)	13.0/0.0	17		3.55	59 Btuh
5	Frame - Wood	- Ext	(0.089)	13.0/0.0	81		3.55	287 Btuh
6	Frame - Wood	- Ext	(0.089)	13.0/0.0	163		3.55	580 Btuh
7	Frame - Wood	- Ext	(0.089)	13.0/0.0	35		3.55	124 Btuh
8	Frame - Wood	- Ext	(0.089)	13.0/0.0	183		3.55	650 Btuh
9	Frame - Wood	- Ext	(0.089)	13.0/0.0	35		3.55	124 Btuh
10	Frame - Wood	- Ext	(0.089)	13.0/0.0	53		3.55	188 Btuh
11	Frame - Wood	- Adj	(0.089)	13.0/0.0	257		3.55	913 Btuh
12	Frame - Wood	- Ext	(0.089)	13.0/0.0	159		3.55	566 Btuh
13	Frame - Wood	- Ext	(0.089)	13.0/0.0	211		3.55	750 Btuh
14	Frame - Wood	- Ext	(0.089)	13.0/0.0	33		3.55	118 Btuh
15	Frame - Wood	- Ext	(0.089)	13.0/0.0	89		3.55	316 Btuh
16	Frame - Wood	- Ext	(0.089)	13.0/0.0	128		3.55	456 Btuh
17	Frame - Wood	- Ext	(0.089)	13.0/0.0	171		3.55	606 Btuh
18	Frame - Wood	- Ext	(0.089)	13.0/0.0	313		3.55	1109 Btuh
19	Frame - Wood	- Ext	(0.089)	13.0/0.0	81		3.55	287 Btuh
20	Frame - Wood	- Ext	(0.089)	13.0/0.0	17		3.55	59 Btuh
21	Frame - Wood	- Ext	(0.089)	13.0/0.0	40		3.55	142 Btuh
22	Frame - Wood	- Ext	(0.089)	13.0/0.0	90		3.55	320 Btuh
23	Frame - Wood	- Ext	(0.089)	13.0/0.0	96		3.55	340 Btuh
24	Frame - Wood	- Ext	(0.089)	13.0/0.0	100		3.55	365 Btuh

Manual J Winter Calculations

Residential Load - Component Details (continued)

Dennis & Rebecca Mouras
735 SW Sterling Terrace
High Springs, FL 32643

Project Title:
Mouras Residence
Building Type: User

2/24/2023

Walls	Type	Ornt.	Ueff.	R-Value (Cav/Sh)	Area X	HTM=	Load
25	Frame - Wood	- Ext	(0.089)	13.0/0.0	163	3.55	580 Btuh
26	Frame - Wood	- Ext	(0.089)	13.0/0.0	452	3.55	1605 Btuh
27	Frame - Wood	- Ext	(0.089)	13.0/0.0	163	3.55	580 Btuh
28	Frame - Wood	- Ext	(0.089)	13.0/0.0	500	3.55	1775 Btuh
	Wall Total				3988(sqft)		14158 Btuh
Doors	Type	Storm	Ueff.		Area X	HTM=	Load
1	Insulated - Garage, n		(0.460)		18	18.4	327 Btuh
	Door Total				18(sqft)		327Btuh
Ceilings	Type/Color/Surface		Ueff.	R-Value	Area X	HTM=	Load
1	Flat ceil/M/Shing		(0.025)	38.0/0.0	3226	1.0	3275 Btuh
2	Flat ceil/M/Shing		(0.025)	38.0/0.0	914	1.0	927 Btuh
	Ceiling Total				4140(sqft)		4203Btuh
Floors	Type		Ueff.	R-Value	Size X	HTM=	Load
1	Slab On Grade		(1.180)	0.0	328.1 ft(perim.)	47.2	15486 Btuh
2	Raised Wood - Adj		(0.050)	19.0	870.0 sqft	2.0	1745 Btuh
	Floor Total				3942 sqft		17231 Btuh
Envelope Subtotal:							44917 Btuh
Infiltration	Type	Wholehouse	ACH	Volume(cuft)	Wall Ratio	CFM=	
	Natural		0.23	39420	1.00	148.6	6507 Btuh
Duct load	Average sealed, R6.0, Supply(Att), Return(Att)					(DLM of 0.236)	12146 Btuh
All Zones	Sensible Subtotal All Zones						63570 Btuh

WHOLE HOUSE TOTALS

Totals for Heating	Subtotal Sensible Heat Loss Ventilation Sens. Heat Loss Total Heat Loss	(Ex:0 cfm; Sup:0 cfm)	63570 Btuh 0 Btuh 63570 Btuh
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EQUIPMENT

1. Electric Heat Pump	#	63570 Btuh
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Manual J Winter Calculations

Residential Load - Component Details (continued)

Dennis & Rebecca Mouras
735 SW Sterling Terrace
High Springs, FL 32643

Project Title:
Mouras Residence
Building Type: User

2/24/2023

Key: Window types - NFRC (Requires U-Factor and Shading coefficient(SHGC) of glass as numerical values)
or - Glass as 'Clear' or 'Tint' (Uses U-Factor and SHGC defaults)
U - (Window U-Factor)
HTM - (ManualJ Heat Transfer Multiplier)



Version 8

System Sizing Calculations - Summer

Residential Load - Whole House Component Details

Dennis & Rebecca Mouras
735 SW Sterling Terrace
High Springs, FL 32643

Project Title:
Mouras Residence

2/24/2023

Reference City: Gainesville, FL (Defaults)
Humidity difference: 51gr.

Temperature Difference: 19.0F(TMY3 99%)
Summer Setpoint: 75 °F (Required Manual J default)

Component Loads for Whole House

Window	Type*						Overhang		Window Area(sqft)			HTM		Load
	Panes	SHGC	U	InSh	IS	Ornt	Len	Hgt	Gross	Shaded	Unshaded	Shaded	Unshaded	
1	2 NFRC	0.25, 0.36	No	No	NW		9.5ft.	0.5ft.	136.0	0.0	136.0	12	24	3215 Btuh
2	2 NFRC	0.25, 0.36	No	No	NW		9.5ft.	0.5ft.	7.5	0.0	7.5	12	24	177 Btuh
3	2 NFRC	0.25, 0.36	No	No	NW		9.5ft.	2.0ft.	40.0	0.0	40.0	12	24	946 Btuh
4	2 NFRC	0.25, 0.36	No	No	SW		9.5ft.	0.5ft.	45.3	45.3	0.0	12	25	548 Btuh
5	2 NFRC	0.25, 0.36	No	No	NW		9.5ft.	2.0ft.	17.5	0.0	17.5	12	24	414 Btuh
6	2 NFRC	0.25, 0.36	No	No	NW		1.0ft.	2.0ft.	52.5	0.0	52.5	12	24	1241 Btuh
7	2 NFRC	0.25, 0.36	No	No	SW		1.0ft.	3.0ft.	22.0	0.0	22.0	12	25	545 Btuh
8	2 NFRC	0.25, 0.36	No	No	SW		1.5ft.	1.0ft.	8.0	2.9	5.1	12	25	161 Btuh
9	2 NFRC	0.25, 0.36	No	No	NE		12.5f	1.0ft.	24.0	0.0	24.0	12	24	567 Btuh
10	2 NFRC	0.25, 0.36	No	No	SE		19.5f	1.0ft.	16.0	16.0	0.0	12	25	194 Btuh
11	2 NFRC	0.25, 0.36	No	No	SE		19.5f	1.0ft.	96.0	96.0	0.0	12	25	1161 Btuh
12	2 NFRC	0.25, 0.36	No	No	SE		17.5f	1.0ft.	21.0	21.0	0.0	12	25	254 Btuh
13	2 NFRC	0.25, 0.36	No	No	SE		1.5ft.	1.0ft.	21.0	4.4	16.6	12	25	464 Btuh
14	2 NFRC	0.25, 0.36	No	No	NW		1.0ft.	3.0ft.	52.5	0.0	52.5	12	24	1241 Btuh
15	2 NFRC	0.25, 0.36	No	No	NW		9.5ft.	2.0ft.	17.5	0.0	17.5	12	24	414 Btuh
16	2 NFRC	0.25, 0.36	No	No	SW		1.0ft.	1.0ft.	48.0	5.8	42.2	12	25	1115 Btuh
	Excursion													1060 Btuh
	Window Total								625 (sqft)					13717 Btuh

Manual J Summer Calculations

Residential Load - Component Details (continued)

Dennis & Rebecca Mouras
735 SW Sterling Terrace
High Springs, FL 32643

Project Title: Climate:FL_GAINESVILLE_REGIONAL_A
Mouras Residence

2/24/2023

Walls	Type	U-Value	R-Value	Area(sqft)	HTM	Load
			Cav/Sheath			
1	Frame - Wood - Ext	0.09	13.0/0.0	196.0	2.3	444 Btuh
2	Frame - Wood - Ext	0.09	13.0/0.0	64.7	2.3	146 Btuh
3	Frame - Wood - Ext	0.09	13.0/0.0	94.2	2.3	213 Btuh
4	Frame - Wood - Ext	0.09	13.0/0.0	16.7	2.3	38 Btuh
5	Frame - Wood - Ext	0.09	13.0/0.0	80.8	2.3	183 Btuh
6	Frame - Wood - Ext	0.09	13.0/0.0	163.3	2.3	370 Btuh
7	Frame - Wood - Ext	0.09	13.0/0.0	35.0	2.3	79 Btuh
8	Frame - Wood - Ext	0.09	13.0/0.0	183.0	2.3	414 Btuh
9	Frame - Wood - Ext	0.09	13.0/0.0	35.0	2.3	79 Btuh
10	Frame - Wood - Ext	0.09	13.0/0.0	52.8	2.3	120 Btuh
11	Frame - Wood - Adj	0.09	13.0/0.0	257.2	1.7	434 Btuh
12	Frame - Wood - Ext	0.09	13.0/0.0	159.3	2.3	361 Btuh
13	Frame - Wood - Ext	0.09	13.0/0.0	211.3	2.3	478 Btuh
14	Frame - Wood - Ext	0.09	13.0/0.0	33.3	2.3	75 Btuh
15	Frame - Wood - Ext	0.09	13.0/0.0	89.0	2.3	201 Btuh
16	Frame - Wood - Ext	0.09	13.0/0.0	128.3	2.3	290 Btuh
17	Frame - Wood - Ext	0.09	13.0/0.0	170.7	2.3	386 Btuh
18	Frame - Wood - Ext	0.09	13.0/0.0	312.5	2.3	707 Btuh
19	Frame - Wood - Ext	0.09	13.0/0.0	80.8	2.3	183 Btuh
20	Frame - Wood - Ext	0.09	13.0/0.0	16.7	2.3	38 Btuh
21	Frame - Wood - Ext	0.09	13.0/0.0	40.0	2.3	91 Btuh
22	Frame - Wood - Ext	0.09	13.0/0.0	90.0	2.3	204 Btuh
23	Frame - Wood - Ext	0.09	13.0/0.0	95.8	2.3	217 Btuh
24	Frame - Wood - Ext	0.09	13.0/0.0	102.7	2.3	232 Btuh
25	Frame - Wood - Ext	0.09	13.0/0.0	163.3	2.3	370 Btuh
26	Frame - Wood - Ext	0.09	13.0/0.0	452.0	2.3	1023 Btuh
27	Frame - Wood - Ext	0.09	13.0/0.0	163.3	2.3	370 Btuh
28	Frame - Wood - Ext	0.09	13.0/0.0	500.0	2.3	1132 Btuh
	Wall Total			3988 (sqft)		8878 Btuh
Doors	Type			Area (sqft)	HTM	Load
1	Insulated - Garage			17.8	13.8	245 Btuh
	Door Total			18 (sqft)		245 Btuh
Ceilings	Type/Color/Surface	U-Value	R-Value	Area(sqft)	HTM	Load
1	Vented Attic/Med/Shingle/RB	0.025	38.0/0.0	3226.0	1.12	3603 Btuh
2	Vented Attic/Med/Shingle/RB	0.025	38.0/0.0	913.5	1.12	1020 Btuh
	Ceiling Total			4140 (sqft)		4623 Btuh
Floors	Type		R-Value	Size	HTM	Load
1	Slab On Grade		0.0	3072 (ft-perimeter)	0.0	0 Btuh
2	Raised Wood - Adj		19.0	870 (sqft)	0.7	611 Btuh
	Floor Total			3942.0 (sqft)		611 Btuh
				Envelope Subtotal:		28073 Btuh

Manual J Summer Calculations

Residential Load - Component Details (continued)

Dennis & Rebecca Mouras
735 SW Sterling Terrace
High Springs, FL 32643

Project Title: Mouras Residence
Climate: FL_GAINESVILLE_REGIONAL_A

2/24/2023

Infiltration	Type Natural	Average ACH 0.17	Volume(cuft) 39420	Wall Ratio 1	CFM= 111.4	Load 2318 Btuh
Internal gain		Occupants 10	Btuh/occupant X 230	Appliance +	1700	Load 4000 Btuh
					Sensible Envelope Load:	34391 Btuh
Duct load	Average sealed, Supply(R6.0-Attic), Return(R6.0-Attic)				(DGM of 0.341)	11734 Btuh
					Sensible Load All Zones	46125 Btuh

Manual J Summer Calculations

Residential Load - Component Details (continued)

Dennis & Rebecca Mouras
735 SW Sterling Terrace
High Springs, FL 32643

Project Title:
Mouras Residence

Climate: FL_GAINESVILLE_REGIONAL_A

2/24/2023

WHOLE HOUSE TOTALS

Whole House Totals for Cooling	Sensible Envelope Load All Zones	34391 Btuh
	Sensible Duct Load	11734 Btuh
	Total Sensible Zone Loads	46125 Btuh
	Sensible ventilation (Ex:0 cfm; Sup:0 cfm)	0 Btuh
	Blower	0 Btuh
	Total sensible gain	46125 Btuh
	Latent infiltration gain (for 51 gr. humidity difference)	3846 Btuh
	Latent ventilation gain	0 Btuh
	Latent duct gain	2820 Btuh
	Latent occupant gain (10.0 people @ 200 Btuh per person)	2000 Btuh
	Latent other gain	0 Btuh
	Latent total gain	8666 Btuh
	TOTAL GAIN	54791 Btuh

EQUIPMENT

1. Central Unit	#	54791 Btuh
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*Key: Window types (Panels - Number and type of panes of glass)

(SHGC - Shading coefficient of glass as SHGC numerical value)

(U - Window U-Factor)

(InSh - Interior shading device: none(No), Blinds(B), Draperies(D) or Roller Shades(R))

- For Blinds: Assume medium color, half closed

For Draperies: Assume medium weave, half closed

For Roller shades: Assume translucent, half closed

(IS - Insect screen: none(N), Full(F) or Half(½))

(Ornt - compass orientation)



Version 8