Residential System Sizing Calculation

Summary

Udelhofen_Dominguez
SW Otter Lane
Ft. White, FL 32038

Project Title:
Udelhofen_Dominguez

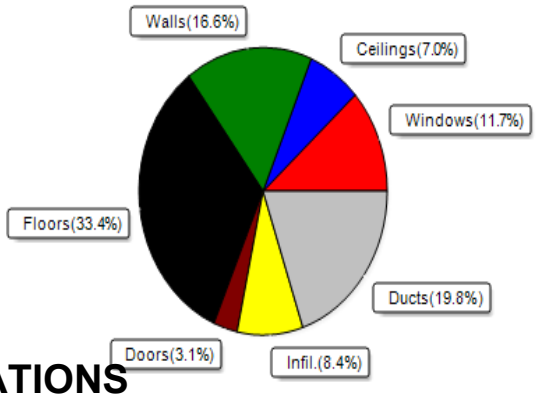
4/4/2025

Location for weather data: Ocala, FL - Defaults: Latitude(29.17) Altitude(89 ft.) Temp Range(M)					
Humidity data: Interior RH (50%) Outdoor wet bulb (77F) Humidity difference(41gr.)					
Winter design temperature(MJ8 99%/Cu)	34	F	Summer design temperature(MJ8 99%/Cu)	99	F
Winter setpoint	70	F	Summer setpoint	75	F
Winter temperature difference	36	F	Summer temperature difference	24	F
Total heating load calculation	**21243**	**Btuh**	**Total cooling load calculation**	**19499**	**Btuh**
Submitted heating capacity	% of calc	Btuh	Submitted cooling capacity	% of calc	Btuh
Total (Electric Heat Pump)	127.3	27035	Sensible (SHR = 0.75)	81.9	13414
Heat Pump + Auxiliary(0.0kW)	127.3	27035	Latent	143.5	4471
			Total (Electric Heat Pump)	91.7	17886

WINTER CALCULATIONS

Winter Heating Load (for 1549 sqft)

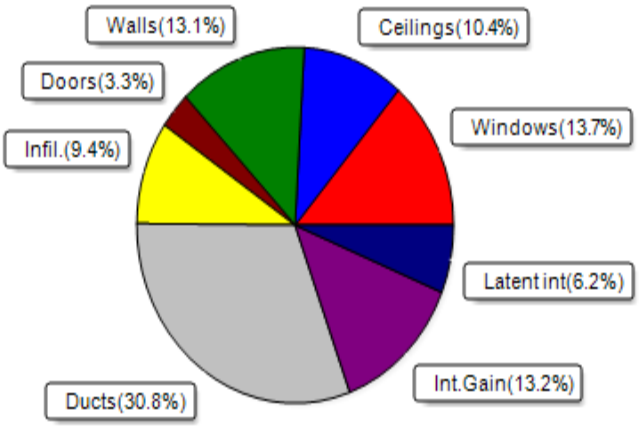
Load component			Load	
Window total	192	sqft	2488	Btuh
Wall total	1268	sqft	3527	Btuh
Door total	40	sqft	662	Btuh
Ceiling total	1626	sqft	1486	Btuh
Floor total	1549	sqft	7086	Btuh
Infiltration	45	cfm	1777	Btuh
Duct loss			4216	Btuh
Subtotal			**21243**	**Btuh**
Ventilation	Ex:0 cfm; Sup:0 cfm		0	Btuh
TOTAL HEAT LOSS			**21243**	**Btuh**



SUMMER CALCULATIONS

Summer Cooling Load (for 1549 sqft)

Load component			Load	
Window total	192	sqft	2673	Btuh
Wall total	1268	sqft	2554	Btuh
Door total	40	sqft	644	Btuh
Ceiling total	1626	sqft	2023	Btuh
Floor total			0	Btuh
Infiltration	34	cfm	889	Btuh
Internal gain			2580	Btuh
Duct gain			5020	Btuh
Sens.Ventilation	Ex:0 cfm; Sup:0 cfm		0	Btuh
Blower Load			0	Btuh
Total sensible gain			**16382**	**Btuh**
Latent gain(ducts)			978	Btuh
Latent gain(infiltration)			939	Btuh
Latent gain(ventilation)			0	Btuh
Latent gain(internal/occupants/other)			1200	Btuh
Total latent gain			**3117**	**Btuh**
TOTAL HEAT GAIN			19499	**Btuh**



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Columbia County Building Department
Plans Reviewed for Code Compliance
State of Florida

EnergyGauge® System Sizing
PREPARED BY: _____
DATE: 4 / 7 / 2025

System Sizing Calculations - Winter

Residential Load - Whole House Component Details

Udelhofen_Dominguez
SW Otter Lane
Ft. White, FL 32038

Project Title:
Udelhofen_Dominguez
Building Type: User

4/4/2025

Reference City: Ocala, FL (Defaults) Winter Temperature Difference: 36.0 °F (MJ8 99%/Cu)
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	S	105.0	13.0	1361 Btuh
2	2, NFRC 0.25	Vinyl	0.36	E	15.0	13.0	194 Btuh
3	2, NFRC 0.25	Vinyl	0.36	N	12.0	13.0	156 Btuh
4	2, NFRC 0.25	Metal	0.36	N	40.0	13.0	518 Btuh
5	2, NFRC 0.25	TIM	0.36	N	20.0	13.0	259 Btuh
	Window Total				192.0(sqft)		2488 Btuh
Walls	Type	Ornt.	Ueff.	R-Value (Cav/Sh)	Area X	HTM=	Load
1	Frame - Wood	- Ext	(0.077)	19.0/0.0	373	2.78	1038 Btuh
2	Frame - Wood	- Ext	(0.077)	19.0/0.0	237	2.78	659 Btuh
3	Frame - Wood	- Ext	(0.077)	19.0/0.0	426	2.78	1185 Btuh
4	Frame - Wood	- Ext	(0.077)	19.0/0.0	54	2.78	150 Btuh
5	Frame - Wood	- Adj	(0.077)	19.0/0.0	178	2.78	495 Btuh
	Wall Total				1268(sqft)		3527 Btuh
Doors	Type	Storm	Ueff.		Area X	HTM=	Load
1	Insulated - Exterior,	n	(0.460)		20	16.6	331 Btuh
2	Insulated - Garage,	n	(0.460)		20	16.6	331 Btuh
	Door Total				40(sqft)		662Btuh
Ceilings	Type/Color/Surface		Ueff.	R-Value	Area X	HTM=	Load
1	Flat ceil/D/Metal		(0.025)	38.0/0.0	1626	0.91	1486 Btuh
	Ceiling Total				1626(sqft)		1486Btuh
Floors	Type		Ueff.	R-Value	Size X	HTM=	Load
1	Slab On Grade		(1.180)	0.0	166.8 ft(perim.)	42.5	7086 Btuh
	Floor Total				1549 sqft		7086 Btuh
					Envelope Subtotal:		15250 Btuh
Infiltration	Type	Wholehouse	ACH	Volume(cuft)	Wall Ratio	CFM=	
	Natural		0.19	13941	1.00	45.0	1777 Btuh
Duct load	Average sealed, R6.0, Supply(Att), Return(Att)					(DLM of 0.248)	4216 Btuh
All Zones				**Sensible Subtotal All Zones**			**21243 Btuh**

Manual J Winter Calculations

Residential Load - Component Details (continued)

Udelhofen_Dominguez
SW Otter Lane
Ft. White, FL 32038

Project Title:
Udelhofen_Dominguez
Building Type: User

4/4/2025

WHOLE HOUSE TOTALS

Totals for Heating	Subtotal Sensible Heat Loss Ventilation Sens. Heat Loss (Ex:0 cfm; Sup:0 cfm) Total Heat Loss	21243 Btuh 0 Btuh 21243 Btuh

EQUIPMENT

1. Electric Heat Pump	#	27035 Btuh

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)

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System Sizing Calculations - Summer

Residential Load - Whole House Component Details

Udelhofen_Dominguez
SW Otter Lane
Ft. White, FL 32038

Project Title:
Udelhofen_Dominguez

4/4/2025

Reference City: Ocala, FL (Defaults)
Humidity difference: 41gr.

Temperature Difference: 24.0F(MJ8 99%/Cu)
Summer Setpoint: 75 °F (Required Manual J default)

Component Loads for Whole House

	Type*					Overhang		Window Area(sqft)			HTM		Load
Window	Panes	SHGC	U	InSh	IS	Ornt	Len	Hgt	Gross	Shaded	Unshaded	Shaded	Unshaded	
1	2 NFRC	0.25,	0.36	No	No	S	1.5ft.	1.0ft.	105.0	105.0	0.0	14	16	1462 Btuh
2	2 NFRC	0.25,	0.36	No	No	E	7.5ft.	1.0ft.	15.0	15.0	0.0	14	33	209 Btuh
3	2 NFRC	0.25,	0.36	No	No	N	16.5f	1.0ft.	12.0	0.0	12.0	14	14	167 Btuh
4	2 NFRC	0.25,	0.36	No	No	N	16.5f	1.0ft.	40.0	0.0	40.0	14	14	557 Btuh
5	2 NFRC	0.25,	0.36	No	No	N	16.5f	1.0ft.	20.0	0.0	20.0	14	14	278 Btuh
	Window Total										192 (sqft)			2673 Btuh

Walls	Type	U-Value	R-Value Cav/Sheath	Area(sqft)	HTM	Load
1	Frame - Wood - Ext	0.08	19.0/0.0	373.0	2.0	761 Btuh
2	Frame - Wood - Ext	0.08	19.0/0.0	237.0	2.0	483 Btuh
3	Frame - Wood - Ext	0.08	19.0/0.0	426.0	2.0	869 Btuh
4	Frame - Wood - Ext	0.08	19.0/0.0	54.0	2.0	110 Btuh
5	Frame - Wood - Adj	0.08	19.0/0.0	178.0	1.9	330 Btuh
	Wall Total			1268 (sqft)		2554 Btuh

Doors	Type	Area (sqft)	HTM	Load
1	Insulated - Exterior	20.0	16.1	322 Btuh
2	Insulated - Garage	20.0	16.1	322 Btuh
	Door Total	40 (sqft)		644 Btuh

Ceilings	Type/Color/Surface	U-Value	R-Value	Area(sqft)	HTM	Load
1	Vented Attic/DarkMetal/RB	0.025	38.0/0.0	1626.4	1.24	2023 Btuh
	Ceiling Total			1626 (sqft)		2023 Btuh

Floors	Type	R-Value	Size	HTM	Load
1	Slab On Grade	0.0	1549 (ft-perimeter)	0.0	0 Btuh
	Floor Total		1549.0 (sqft)		0 Btuh
			Envelope Subtotal:		7893 Btuh

Infiltration	Type	Average ACH	Volume(cuft)	Wall Ratio	CFM=	Load
	Natural	0.15	13941	1	33.8	889 Btuh
Internal gain		Occupants	Btuh/occupant		Appliance	Load
		6	X 230	+	1200	2580 Btuh
				Sensible Envelope Load:		11362 Btuh
Duct load	Average sealed,Supply(R6.0-Attic), Return(R6.0-Attic)			(DGM of 0.442)		5020 Btuh
				Sensible Load All Zones		**16382 Btuh**

Manual J Summer Calculations

Residential Load - Component Details (continued)

Udelhofen_Dominguez
SW Otter Lane
Ft. White, FL 32038

Project Title:
Udelhofen_Dominguez

Climate:FL_OCALA_MUNI_(AWOS)

4/4/2025

WHOLE HOUSE TOTALS

Whole House Totals for Cooling	**Sensible Envelope Load All Zones**	**11362**	**Btuh**
	Sensible Duct Load	5020	Btuh
	Total Sensible Zone Loads	**16382**	**Btuh**
	Sensible ventilation (Ex:0 cfm; Sup:0 cfm)	0	Btuh
	Blower	0	Btuh
	Total sensible gain	**16382**	**Btuh**
	Latent infiltration gain (for 41 gr. humidity difference)	939	Btuh
	Latent ventilation gain	0	Btuh
	Latent duct gain	978	Btuh
	Latent occupant gain (6.0 people @ 200 Btuh per person)	1200	Btuh
	Latent other gain	0	Btuh
	Latent total gain	**3117**	**Btuh**
	TOTAL GAIN	**19499**	**Btuh**

EQUIPMENT

1. Central Unit	#	17886 Btuh

*Key: Window types (Panes - 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)

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