Residential System Sizing Calculation

Summary

Project Title:
Karnes

Karnes Blvd
Kansas City, MO 64111

KwikModel Base   3/15/2024

Location for weather data: Kansas City (Do, MO - Defaults: Latitude(39) Altitude(751 ft.) Temp Range(M)			
Humidity data: Interior RH (50%) Outdoor wet bulb (76F) Humidity difference(42gr.)			
Winter design temperature(MJ8 99%)	9 F	Summer design temperature(MJ8 99%)	94 F
Winter setpoint	70 F	Summer setpoint	75 F
Winter temperature difference	61 F	Summer temperature difference	19 F
Total heating load calculation	**131835 Btuh**	**Total cooling load calculation**	**83866 Btuh**
Submitted heating capacity	% of calc Btuh	Submitted cooling capacity	% of calc Btuh
Total (Natural Gas Furnace)	132.7 175000	Sensible (SHR = 0.85)	99.4 76500
		Latent	195.2 13500
		Total	107.3 90000

WINTER CALCULATIONS

Winter Heating Load (for 2693 sqft)

Load component			Load	
Window total	535	sqft	35604	Btuh
Wall total	2980	sqft	56307	Btuh
Door total	104	sqft	2931	Btuh
Ceiling total	1248	sqft	3731	Btuh
Floor total	See detail report		7250	Btuh
Infiltration	264	cfm	17301	Btuh
Duct loss			8712	Btuh
Subtotal			**131835**	**Btuh**
Ventilation	Ex:0 cfm; Sup:0 cfm		0	Btuh
TOTAL HEAT LOSS			**131835**	**Btuh**

Ceilings(2.8%)
Windows(27.0%)
Walls(42.7%)
Ducts(6.6%)
Infil.(13.1%)
Floors(5.5%)
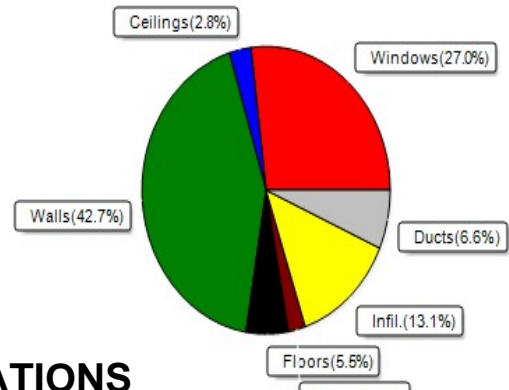
SUMMER CALCULATIONS

Summer Cooling Load (for 2462 sqft)

Load component			Load	
Window total	535	sqft	36389	Btuh
Wall total	2980	sqft	23627	Btuh
Door total	104	sqft	940	Btuh
Ceiling total	1248	sqft	3303	Btuh
Floor total			1115	Btuh
Infiltration	136	cfm	2776	Btuh
Internal gain			4010	Btuh
Duct gain			4790	Btuh
Sens.Ventilation	Ex:0 cfm; Sup:0 cfm		0	Btuh
Blower Load			0	Btuh
Total sensible gain			**76949**	**Btuh**
Latent gain(ducts)			1724	Btuh
Latent gain(infiltration)			3793	Btuh
Latent gain(ventilation)			0	Btuh
Latent gain(internal/occupants/other)			1400	Btuh
Total latent gain			**6917**	**Btuh**
TOTAL HEAT GAIN			**83866**	**Btuh**

Windows(43.4%)
Ceilings(3.9%)
Int.Gain(4.8%)
Latent int(1.7%)
Ducts(7.8%)
Walls(28.2%)
Floors(1.3%)

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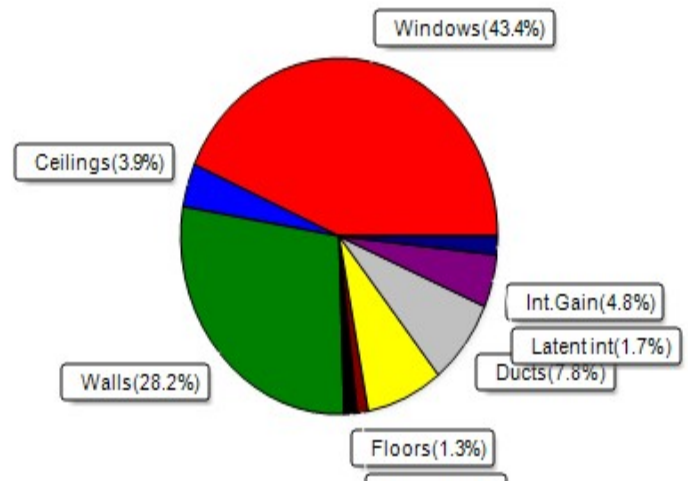
8th Edition

EnergyGauge® System Sizing
PREPARED BY: _____
DATE: _____

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