



# Load Short Form

## Entire House

### Wrightsoft

Job:  
Date: Nov 24, 2010  
By: Chris

131 Hartwell ave, Lexington, MA 02421 Phone: 781-862-8719 Fax: 781-861-2058 Email: SALES@WRIGHTSOFT.COM Web: WWW.WRIGHTSOFT.COM

## Project Information

For: Joe Customer  
123 Main St, Baltimore, md 00000  
Phone: 555-555-5555 Fax: 555-555-0000  
Web: www.wrightsoft.com Email: sales@wrightsoft.com

## Design Information

	Htg	Clg	Infiltration
Outside db (°F)	17	91	Simplified
Inside db (°F)	70	75	Average
Design TD (°F)	53	16	2 (Average)
Daily range	-	M	
Inside humidity (%)	30	50	
Moisture difference (gr/lb)	22	36	

## HEATING EQUIPMENT

Make  
Trade  
Model  
GAMA ID

Efficiency 80 AFUE  
Heating input 0 Btuh  
Heating output 0 Btuh  
Temperature rise 0 °F  
Actual air flow 660 cfm  
Air flow factor 0.029 cfm/Btuh  
Static pressure 0 in H2O  
Space thermostat

## COOLING EQUIPMENT

Make  
Trade  
Cond  
Coil  
ARI ref no.  
Efficiency 0 SEER  
Sensible cooling 0 Btuh  
Latent cooling 0 Btuh  
Total cooling 0 Btuh  
Actual air flow 660 cfm  
Air flow factor 0.046 cfm/Btuh  
Static pressure 0 in H2O  
Load sensible heat ratio 0.90

ROOM NAME	Area (ft²)	Htg load (Btuh)	Clg load (Btuh)	Htg AVF (cfm)	Clg AVF (cfm)
First Floor	1000	15995	13446	470	615
Basement	1000	6493	1002	191	46
Entire House	2000	22488	14448	660	660
Other equip loads		0	0		
Equip. @ 0.96 RSM			13899		
Latent cooling			1609		
TOTALS	2000	22488	15508	660	660

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## Project Information

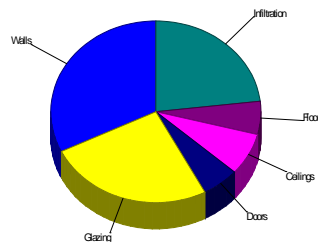
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## Design Conditions

<b>Location:</b>		<b>Indoor:</b>		<b>Heating</b>	<b>Cooling</b>
Baltimore Blt-Washngtn Int'l, MD, US		Indoor temperature (°F)		70	75
Elevation: 154 ft		Design TD (°F)		53	16
Latitude: 39°N		Relative humidity (%)		30	50
		Moisture difference (gr/lb)		22.2	35.9
<b>Outdoor:</b>	<b>Heating</b>	<b>Cooling</b>	<b>Infiltration:</b>		
Drybulb (°F)	17	91	Method	Simplified	
Daily range (°F)	-	19 ( M )	Construction quality	Average	
Wet bulb (°F)	-	74	Fireplaces	2 (Average)	
Wind speed (mph)	15.0	7.5			

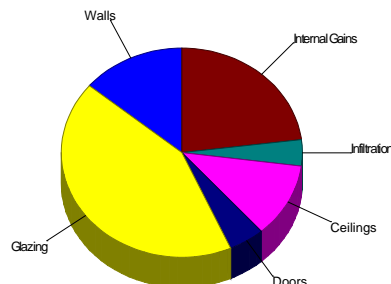
## Heating

Component	Btuh/ft²	Btuh	% of load
Walls	4.0	7238	32.2
Glazing	30.7	5744	25.5
Doors	20.6	1295	5.8
Ceilings	1.7	1686	7.5
Floors	1.3	1318	5.9
Infiltration	4.0	5208	23.2
Ducts		0	0
Piping		0	0
Humidification		0	0
Ventilation		0	0
Adjustments		0	0
<b>Total</b>		<b>22488</b>	<b>100.0</b>



## Cooling

Component	Btuh/ft²	Btuh	% of load
Walls	1.1	2009	13.9
Glazing	33.0	6173	42.7
Doors	11.1	697	4.8
Ceilings	1.7	1659	11.5
Floors	0	0	0
Infiltration	0.5	591	4.1
Ducts		0	0
Ventilation		0	0
Internal gains		3320	23.0
Blower		0	0
Adjustments		0	0
<b>Total</b>		<b>14448</b>	<b>100.0</b>



Latent Cooling Load = 1609 Btuh  
Overall U-value = 0.078 Btuh/ft²-°F

Data entries checked.



# Component Constructions

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Dry bulb (°F)	17	91	Method	Simplified	
Daily range (°F)	-	19 ( M )	Construction quality	Average	
Wet bulb (°F)	-	74	Fireplaces	2 (Average)	
Wind speed (mph)	15.0	7.5			

## Construction descriptions

	Or	Area ft²	U-value Btuh/ft²·°F	Insul R ft²·°F/Btuh	Htg HTM Btuh/ft²	Loss Btuh	Clg HTM Btuh/ft²	Gain Btuh
<b>Walls</b>								
12C-0sw: Frm wall, vnl ext, r-13 cav ins, 5/8" gypsum board int	n	242	0.091	13.0	4.80	1161	2.12	514
fnsh, 2"x4" wood frm	e	167	0.091	13.0	4.80	801	2.12	355
	s	235	0.091	13.0	4.80	1127	2.12	499
	w	176	0.091	13.0	4.80	844	2.12	374
	all	820	0.091	13.0	4.80	3932	2.12	1742
15B13-0wc-6: Bg wall, heavy dry or light damp soil, 2"x4" wood int	n	296	0.053	13.0	3.19	945	0.22	65
frm, concrete wall, r-13 cav ins, 10" thk	e	200	0.053	13.0	3.32	664	0.29	58
	s	314	0.053	13.0	3.29	1033	0.27	86
	w	200	0.053	13.0	3.32	664	0.29	58
	all	1010	0.053	13.0	3.27	3306	0.26	266

## Partitions

(none)

## Windows

1D-c2ov: 2 glazing, clr outr, air gas, vnl frm mat, clr innr, 1/4" gap, 1/8" thk	n	36	0.570	0	30.0	1081	20.1	725
	e	12	0.570	0	30.0	360	62.2	746
	s	64	0.570	0	30.0	1922	31.7	2026
	w	24	0.570	0	30.0	721	62.2	1492
	all	136	0.570	0	30.0	4085	36.7	4989
1D-c2owd: 2 glazing, clr outr, air gas, wd frm mat, clr innr, 1/4" gap, 1/8" thk	n	42	0.570	0	30.0	1262	20.1	846
1E-c2fm: 2 glazing, clr outr, air gas, mtl no brk frm mat, clr innr, 1/4" gap, 1/8" thk	n	3	0.690	0	36.4	109	24.6	74
	s	3	0.690	0	36.4	109	38.8	116
	all	6	0.690	0	36.4	218	31.7	190
1B-c1fm: 1 glazing, clr glz, mtl no brk frm mat, 1/8" thk	s	3	1.130	0	59.6	179	49.5	149

## Doors

11D0: Door, wd sc type	n	21	0.390	0	20.6	432	11.1	232
	e	21	0.390	0	20.6	432	11.1	232
	s	21	0.390	0	20.6	432	11.1	232
	all	63	0.390	0	20.6	1295	11.1	697



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Ceilings

16B-30ad: Attic ceiling, asphalt shingles roof mat, r-30 ceil ins, 5/8" gypsum board int fnsh	1000	0.032	30.0	1.69	1686	1.66	1659
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Floors

21A-24c: Bg floor, heavy dry or light damp soil, 6' depth, carpet flr fnsh	1000	0.025	0	1.32	1318	0	0
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# Project Summary

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Notes: Calculation of house post-improvement. R13 insulation in walls. R30 in ceiling. Double pane windows. Average envelope.

## Design Information

Weather: Baltimore Blt-Washngtn Int'l, MD, US

### Winter Design Conditions

Outside db	17 °F
Inside db	70 °F
Design TD	53 °F

### Summer Design Conditions

Outside db	91 °F
Inside db	75 °F
Design TD	16 °F
Daily range	M
Relative humidity	50 %
Moisture difference	36 gr/lb

### Heating Summary

Structure	22488 Btuh
Ducts	0 Btuh
Central vent (0 cfm)	0 Btuh
Humidification	0 Btuh
Piping	0 Btuh
Equipment load	22488 Btuh

### Sensible Cooling Equipment Load Sizing

Structure	14448 Btuh
Ducts	0 Btuh
Central vent (0 cfm)	0 Btuh
Blower	0 Btuh
Use manufacturer's data	n
Rate/swing multiplier	0.96
Equipment sensible load	13899 Btuh

### Infiltration

Method	Simplified
Construction quality	Average
Fireplaces	2 (Average)

	Heating	Cooling
Area (ft <sup>2</sup> )	2000	2000
Volume (ft <sup>3</sup> )	10000	10000
Air changes/hour	0.54	0.20
Equiv. AVF (cfm)	90	33

### Latent Cooling Equipment Load Sizing

Structure	1609 Btuh
Ducts	0 Btuh
Central vent (0 cfm)	0 Btuh
Equipment latent load	1609 Btuh
Equipment total load	15508 Btuh
Req. total capacity at 0.70 SHR	1.7 ton

### Heating Equipment Summary

Make	
Trade	
Model	
GAMA ID	
Efficiency	80 AFUE
Heating input	0 Btuh
Heating output	0 Btuh
Temperature rise	0 °F
Actual air flow	660 cfm
Air flow factor	0.029 cfm/Btuh
Static pressure	0 in H2O
Space thermostat	

### Cooling Equipment Summary

Make	
Trade	
Cond	
Coil	
ARI ref no.	
Efficiency	0 SEER
Sensible cooling	0 Btuh
Latent cooling	0 Btuh
Total cooling	0 Btuh
Actual air flow	660 cfm
Air flow factor	0.046 cfm/Btuh
Static pressure	0 in H2O
Load sensible heat ratio	0.90

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