



LeConte Craftsman Cottage Series

House Details

Sq. Ft.	2000
Bedrooms	3
Bathrooms	2

Energy Details

Appliances	- 7584 kW/Yr
Hvac	
Lighting	
Water Heating	
PV Solar	+ 12,755 kW/Yr

Total Energy Produced

= **+5171 kW/Yr**



Energy Calculation Sources
 U.S. Department of Energy
 U.N. Human Development Report
 NREL PVWatts Calculator



THE FUTURE IS HERE NOW

LeConte Craftsman Cottage Series - Energy Details

Consumption

Appliances

Appliance	Wattage		Use	Day	Mo	Yr	Use Source
Dishwasher	1039 Watts	Energy Label	0.77 loads/day	0.8 kW	24.2 kW	290 kW	Consortium for Energy Efficiency
Convection Oven	1738 Watts	Energy Label	1 hr/day	1.74 kW	52.1 kW	625.2 kW	California Energy Commission
Refrigerator	280 Watts	Energy Label	4.75 hrs/day	1.3 kW	40 kW	476 kW	Bangor Hydro Electric Company
Induction Cooktop	1800 Watts	Energy Label	0.5 hrs/day	0.9 kW	27 kW	324 kW	
Clothes Dryer	4000 Watts	Energy Label	1 load/day	4 kW	1192 kW	1430 kW	Consumer Energy Center
Clothes Washer	403 Watts	Energy Label	1 load/day	0.4 kW	12.1 kW	145 kW	
Electric Fireplace	1440 Watts	Energy Label	96 hrs/yr	0.38 kW	11.4 kW	136.4 kW	Intl HPBA
DC Ceiling Fan	3 Watts	Energy Label	4 hrs/day	0.01 kW	03 kW	4 kW	Bangor Hydro Electric Company U.S. Department of Energy GE
Garage Opener	5 Watts	Energy Label	3 open + 3 close	0.03 kW	0.9 kW	10 kW	
Toaster	1100 watts	Average	4 minutes/day	0.07 kW	2.1 kW	25.2 kW	
Microwave	1200 Watts	Average	20 minutes/day	0.4 kW	12 kW	144 kW	
Coffee Maker	900 Watts	Average	20 minutes/day	0.3 kW	9 kW	108 kW	
Blender	375 Watts	Average	15 minutes/wk	0.01 kW	0.4 kW	4.9 kW	
Garbage Disposal	373 Watts	Average	1 hr/month	0.01 kW	0.37 kW	4.5 kW	
Desktop Computer	120 Watts	Average	4 hrs/day	0.48 kW	14.2 kW	172.8 kW	
Computer Monitor	150 Watts	Average	4 hrs/day	0.6 kW	18 kW	216 kW	
Printer	45 Watts	Average	4 hrs/day	0.18 kW	5.4 kW	64.8 kW	
LCD TV	213 Watts	Average	6 hrs/day	1.3 kW	38.3 kW	460.1 kW	
DVD Player	17 Watts	Average	8 hrs/wk	0.02 kW	0.6 kW	7 kW	
Hair Dryer	1250 Watts	Average	10 minutes/day	0.21 kW	6.25 kW	75 kW	
Curling Iron	56 Watts	Average	20 minutes/day	0.02 kW	0.56 kW	6.72 kW	

Appliances Total = 4729.62 kW/Yr

LeConte Craftsman Cottage Series - Energy Details

Consumption

Lighting

Season	Wattage		# of Bulbs	Use	Day	Mo	Yr	Use Source
Winter	8 Watts	Energy Label	*12 Bulbs	8 hrs	0.77 kW	23 kW	69.1 kW	Bangor Hydro Electric Company
Spring/Fall	8 Watts	Energy Label		6 hrs	0.58 kW	17.3 kW	103.7 kW	
Summer	8 Watts	Energy Label		4 hrs	0.38 kW	11.5 kW	34.6 kW	

*Not all bulbs in use simultaneously

Lighting Total = 207.4 kW/Yr

2 Ton Geothermal HVAC

Season	Mode	Wattage	Use	Day	Season	Yr	Use Source
Winter (3 Months)	Heat	1423 Watts	4.5 hrs	6.4 kW	576.3 kW	2008.8 kW	Energy Label
Spring/Fall (6 Months)	Heat/Cool	1488 Watts	3 hrs	4.5 kW	803.5 kW		
Summer (3 Months)	Cool	1553 Watts	4.5 hrs	6.9 kW	629 kW		

Geothermal HVAC Total = 2008.8 kW/Yr

Water Heating

Efficiency Increases				Consumption			
Hybrid Water Heater				1837 kW/Yr			
7 Months in Use				1071.2 kW			
10% Efficiency Increase (Hot Water Delivery System)				-108 kW			
After 10% Reduction				963.2 kW			
30% Efficiency Increase (Warm Ground Water Intake)				-325 kW			
Total 7 Months				638.2 kW			
Heating	Wattage		Use	Day	Mo	Yr	
Hybrid Water Heater	1837 kW/Yr	Energy Label	7 Months (Sept-Mar)	0.77 kW	23 kW	638.2 kW	
Geothermal Hot Water	*See Geothermal Cooling mode		5 Months (May-Aug)	*	*	*	

Source: U.N. Human Development Report

Water Heating Total = 638.2 kW/Yr

LeConte Craftsman Cottage Series - Energy Details

Production

10 kW PV Solar Production

Location		Electrical		Position	
State	Tennessee	DC Rating	10 kW	Array Type	Fixed Tilt
Latitude	35.6° N	DC to AC Loss Factor	0.770 kW	Tilt	14°
Longitude	89.6° W	AC Rating	7.70 kW	Array Azimuth	180°
Month	Solar Radiation (kWh/m ² /day)		Production (AC Rating)		
January	3.06		728 kW		
February	3.72		792 kW		
March	4.81		1105 kW		
April	5.91		1265 kW		
May	6.09		1311 kW		
June	6.68		1366 kW		
July	6.53		1368 kW		
August	6.24		1309 kW		
September	5.34		1097 kW		
October	4.62		1024 kW		
November	3.32		730 kW		
December	2.84		661 kW		
Year	4.93 (Avg)		12,755 kW		

Source: NREL PV Watts Calculator

Solar Production Total = +12,755 kW/Yr

Contrast

Total Home Energy

Energy Consumption		Energy Production	
Appliances	4729.62 kW	PV Solar	12,775 kW/Yr
Lighting	207.4 kW		
HVAC	2008.8 kW		
Water Heating	638.2 kW		
Total Energy Consumption = 7584 kW/Yr		Total Energy Production = 12,755 kW/Yr	

Energy	Hour	Day	Month	Year
Total Energy Consumption	-1.2 kW	-27.8 kW	-833.3 kW	-7584 kW
Total Energy Production	+7.1 kW	+35.4 kW	+1063 kW	+12,755 kW

Total Energy Produced = +5171 kW/Yr

Average = +1.68 units of energy produced per 1 unit consumed

Calculations specific to Ripley, TN. Subject to Lifestyle and Family Size.