

1kWh = ? (Energy Table)²

	Energy		Power	
	Watts	British Thermal Units	MMBtu	Therm
Standard	Wh (1)	3.413	0.0000341	0.00003413
	kWh (1000)	3,413	0.003413	0.03413

Cooling kWh

	5 Months of Cooling	Rationale
5 Months of summer kWh	2867	June to October
Baseline kWh	1750	350 (avg. of May and November, zero cooling and heating) x 5
Less Fan Usage⁴	270	*60w x 30 hours/day (18 hours upstairs, 12 downstairs) x 150
Less LED Lighting Savings⁴	30	8 lights, 10watts a light, times 2.5 less hours a day
Net kWh	817	

Important Resources

	Source
¹ Average Cost of Electricity	https://www.eia.gov/electricity/monthly/epm_table_grapher.php?epmt_5_6_a
² Conversion Tables	https://www.eia.gov/energyexplained/units-and-calculators/energy-conversion-calculators.php
Understanding the difference between Power and Energy	Holladay, Martin. (2012, June 22). Understanding Energy Units. Green Building Advisor. Retrieved from: https://www.greenbuildingadvisor.com/article/understanding-energy-units
Converting SEER³	https://www.e-education.psu.edu/egee102/node/2106
⁴Fan and Light Wattage	http://energyusecalculator.com/electricity_ceilingfan.htm & https://agoodlyhome.com/how-much-electricity-does-a-ceiling-fan-use/

Cooling Analysis (System Comparison)

	Current System	Electric Mini-Splits - MXZ-4C36NAHZ MULTI-ZONE COOLING AND HEATING	Single Zone Downstairs /	Multi-Zone Upstairs	Mini-Split Total	Single Zone, Wall Mounted, non-ducted, Downstairs - MUZ-GL09NA	Ducted Mini-Split (PVA-A12AA7)	Totals	Ducted Mini-Split PVA-A30AA7
Net kWh (kWh used to cool our home)	817.0000	615.958	119.561	428.471	548.032	119.561	183.252	302.813	516.000
kWh cost ¹	0.1212	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121
Cost of Cooling our Home Annually	\$99.02	\$74.65	\$14.49	\$51.93	\$66.42	\$14.49	\$22.21	\$36.70	\$62.54
Active cooling Hours Per Year ³	326.8000	326.800	326.800	326.800	326.800	326.800	326.800	326.800	326.800
System Tons	2.5000	3.000	0.750	1.660	2.410	0.750	1.000	1.750	2.500
BTUs/h (B6 x 12,000)	30000.0000	36000.000	9000.000	23600.000	32600.000	9000.000	12000.000	21000.000	30000.000
SEER	12.0000	19.100	24.600	18.000	-	24.600	21.400	-	19.000
W	2500.0000	1884.8168	365.8537	1311.1111	1676.9648	365.8537	560.7477	926.6013	1578.9474
kW	2.5000	1.8848	0.3659	1.3111	1.6770	0.3659	0.5607	0.9266	1.5789

Key

	= known data from utility bills and equipment labels
	= conclusionary data
	= recommended system