

AI-01190 Electric Bill Estimate

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Tags	Problem
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At 240vac, I hooked up an ammeter to my main circuit breaker and it reads 3A, with the per kw rate at PHP13, calculate my monthly electricity bill.

To calculate your monthly electricity bill, we need to determine the total energy consumption first.

Here are the steps:

1. **Calculate power consumption:**

- Power (P) = Voltage (V) * Current (I)
- $P = 240V * 3A = 720 \text{ watts}$

1. **Convert power to kilowatts:**

- 1 kilowatt (kW) = 1000 watts
- $720 \text{ watts} = 0.72 \text{ kW}$

1. **Calculate energy consumption per hour:**

- Energy (E) = Power (P) * Time (t)
- $E = 0.72 \text{ kW} * 1 \text{ hour} = 0.72 \text{ kilowatt-hour (kWh)}$

1. **Estimate total energy consumption per month:**

- Assuming 30 days in a month and 24 hours per day:
- $\text{Total energy} = 0.72 \text{ kWh/hour} * 30 \text{ days} * 24 \text{ hours/day} = 518.4 \text{ kWh/month}$

1. **Calculate the electricity bill:**

- Bill = Total energy consumption * Rate per kWh
- $\text{Bill} = 518.4 \text{ kWh} * \text{PHP}13/\text{kWh} = \text{PHP}6739.20$

Therefore, your estimated monthly electricity bill is **PHP6739.20**.

Please note that this is an estimate and your actual bill may vary depending on factors such as:

- **Time-of-use rates:** Some electricity providers offer different rates during peak and off-peak hours.

- **Additional charges:** Your bill may include additional charges such as taxes, surcharges, and demand charges.
- **Energy-saving measures:** If you implement energy-saving measures, your consumption and bill will be lower.

From the previous calculation, create a electric consumption table at 1,2,3,4,5,6,7,8,9,10 amps at PHP13.00 per kw

Electricity Consumption Table

Current (Amps)	Power (Watts)	Power (kW)	Daily Consumption (kWh)	Monthly Consumption (kWh)	Monthly Bill (PHP)
1	240	0.24	5.76	172.8	2253.60
2	480	0.48	11.52	345.6	4507.20
3	720	0.72	17.28	518.4	6739.20
4	960	0.96	23.04	691.2	9005.60
5	1200	1.20	28.80	864.0	11232.00
6	1440	1.44	34.56	1036.8	13478.40
7	1680	1.68	40.32	1209.6	15724.80
8	1920	1.92	46.08	1382.4	17971.20
9	2160	2.16	51.84	1555.2	20217.60
10	2400	2.40	57.60	1728.0	22464.00

Assumptions:

- Voltage = 240V
- Rate per kWh = PHP13.00
- 30 days in a month
- 24 hours per day

Please note that this table provides a general estimate and actual consumption and costs may vary based on factors like time-of-use rates, additional charges, and energy efficiency.