

ThyssenKrupp Elevator Americas

Calculating the energy consumption of an elevator becomes very complex due to many of the following factors:

- Elevator Speed
- Elevator Payload
- Frequency of Use
- Hoist Way Efficiency
- Motor Efficiency
- Power Conversion Efficiency
- Idle Losses
- Regeneration

Very similar to the complexity of measuring actual fuel consumption of a vehicle, many of the same variables come into play. Therefore several assumptions must be made on conditions when attempting to predict the energy consumption of elevators knowing that building use, and travel dependencies will change from building to building. This energy calculator is intended to estimate energy consumption of a given set of parameters in order to establish a relative baseline that can be used for “what if” scenarios when considering modernizing an existing elevator, and predicting potential energy savings.

Energy costs are based on the Department of Energy’s national average of \$0.0986/KWh derived from the follow link.

http://www.eia.doe.gov/cneaf/electricity/epm/table5_6_b.html

Cab lighting is based on the following table:

Lighting Type	Watts	Req’d Number
Incandescent	60	9
Halogen	20	9
Fluorescent	40	4
LED	3.7	9

Electricity

We calculate emissions from electricity generation based off of state-based figures from [Department of Energy’s Energy Information Administration](#). On average, electricity sources emit 1.297 lbs CO2 per kWh (0.0005883 metric tons CO2 per kWh). State CO2 emissions per kWh may vary greatly in accordance with the amount of clean energy in the energy supply (Vermont, Idaho: .03 lbs/kWh; North Dakota: 2.24 lbs/kWh).

The energy consumption numbers provided by this calculator are estimates and should be viewed as such. The most accurate way to determine annual energy usage continues to be onsite metering. **Hooking up energy meters should only be performed by a licensed service technician.** Metering is accomplished by hooking up two data logging meters (1 to the 110V circuit, and 1 to the 460V circuit) and capturing the actual energy consumption during business and non-business hours for a period of no less than seven days. A 30 day monitoring period yields the most accurate results, however close approximations can be achieved from a 7 day monitoring period.

If you are interested in knowing how much energy your elevator consumes, or are interested in learning how you can save up to 70% of energy usage, please contact us so that we can have a elevator professional contact you directly.

For suggestions on how to improve the usability of this tool, please email suggestions, comments to ThyssenKruppEnergy.com