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ENERGY STAR Data Center Infrastructure Rating Development
Frequently Asked Questions

Tab 2 - Data Center Operations

Number of Racks

To provide the number of racks in the data center that are typically in operation, please count the number of standard racks, and then add the number of racks calculated from the rack space equivalent described in detail below.

Standard Rack
A "standard rack" is considered to be the typical 19 inch rack that has a rack footprint (actual area covered by the rack) in the data center; service clearance in the front and rear of the rack (generally overlapping with adjoining rows); the allocation of aisles, room equipment access, and circulation; a percentage of the computer room air handling equipment and power distribution equipment added for the rack contribution; and the typical square footage used for a rack—28 ft^2.

Equivalent Racks
All other related free-standing equipment, such as a tape silo, mainframe, Shark DASD, tape library, or equipment consoles that do not conform to the standard rack definition can be converted into "equivalent racks." This calculation can be performed by taking the item's footprint (area) and service clearances needed outside the equipment, and dividing that product by 25 square feet (the difference being 3 square feet in CRAC and PDU contributions from the standard rack definition above). Performing this operation for each piece of non-standard rack equipment will provide the total rack equivalent for the data center.

For example, a tape silo that is 12 feet wide and 16 feet long with two 12 x 3 feet service clearance areas in front and back would have a rack equivalent of 10.56, or rounded up to 11 racks. The calculations are as follows:

- 12 ft x 16 ft (foot print) + (2 x (12 ft x 3 ft service clearances)) = 264 ft^2
- 264 ft^2 / 25 ft^2/rack = 10.56 Equivalent Racks

Round up to the next rack for a total rack equivalent, and add this number to the standard rack count.

Tab 4 - Electricity Data

For a data center within a larger building, how do I account for *lighting* in the annual electricity consumption if it is not submetered with the rest of the data center?

Data center lighting energy use should be captured through your submeter; however, if the data center lighting does not go through your submeter, a clamp reading of the lighting circuit can be taken to measure a near constant lighting load. Take the amperage and voltage from the clamp-on reading and multiple them together. Then, multiply this number by the estimated hours that the lighting is on, and the number of days in the billing cycle to obtain the total kWh for the billing cycle. Generally the "night light" circuit (required by code) is separate, and will remain "on" constantly so the hours are 24/day for that circuit.

For a data center within a larger building, how do I account for *cooling* in the annual electricity consumption if the chiller or cooling equipment is not submetered with the rest of the data center?

Because cooling comprises a significant portion of a data center's energy consumption, the chiller or cooling equipment *must be submetered* in order to participate in this data collection effort. Estimates of energy consumption are not allowed and only measured consumption should be used.

If this requirement renders a facility unable to participate in this data collection effort, please let us know by sending an email to: ENERGYSTARdatacenters@icfi.com.