

Savings Calculations

Overview

Savings are calculated by subtracting the actual energy consumption/cost/CO2 emissions from the baseline. The baseline is what the consumption/cost/CO2 emissions would be without the Enlighted system.

Details

(Eq-1) Total Period Savings

Total Energy Savings over a given period is the summation of the 5-minute interval saving over the period for each energy saving strategy – Task Tuning, Occupancy, and Daylight Harvesting.

$$\text{Total_Savings} = \sum_{t=0}^n \text{Task_Saving5min} + \sum_{t=0}^n \text{Occ_Saving5min} + \sum_{t=0}^n \text{Day_Saving5min}$$

(Eq-2) 5-Minute Savings

The 5-minute interval saving is calculated per fixture based on the summation of the 5-second interval energy savings over the 5-minute period. Each 5-minute savings value is assigned to one of the three energy saving strategies based on the which strategies contributed the most to the 5-minute aggregate total.

$$\text{Saving5min} = \sum_{t=0}^{60} \text{Task_Saving5sec} + \sum_{t=0}^{60} \text{Occ_Saving5sec} + \sum_{t=0}^{60} \text{Day_Saving5sec}$$

(Eq-3) 5-Second Savings

Each 5-second savings value is the difference between the baseline energy consumption and actual energy consumption over the 5-second period. Savings excludes any consumption or savings while the sweep timer is active. Baseline can either be determined at the fixture level (<https://support.enlightedinc.com/hc/en-us/articles/360022434333>), or set at the floor/building/campus/organization level as a contractual baseline value (<https://support.enlightedinc.com/hc/en-us/articles/360022434773>).

(Eq-4) Baseline Energy

When the baseline load is set at the fixture level (<https://support.enlightedinc.com/hc/en-us/articles/360022434333>) the baseline energy consumption over a 5-second interval is determined by multiplying the baseline load (in watts) by 5 seconds then dividing by the number of seconds in an hour to get energy consumption in watt-hours.

$$\text{Baseline5sec-Energy(Wh)} = \text{BaselineLoad} \times 5\text{sec} \div 3600 \times \text{hr}$$

When the contractual baseline energy consumption is set at the floor/building/campus/organization level (<https://support.enlightedinc.com/hc/en-us/articles/360022434773>) the one-hour baseline consumption is equal to the annual consumption divided by the number of hours in a typical year (excludes leap years).

$$\text{Baseline1hr-Energy(kWh)} = \text{Baselineannual-Energy yr} \div 8760 \text{ hr}$$