



ENERGY STAR[®] Program Requirements for Traffic Signals

Eligibility Criteria

Below is the product specification (Version 1.1) for ENERGY STAR qualified traffic signals. A product must meet all of the identified criteria if it is to be qualified as ENERGY STAR by its manufacturer.

This traffic signal specification is based on a low energy requirement and conformance to the Institute for Transportation Engineers (ITE) "Interim LED Purchase Specification, Vehicle Traffic Control Signal Heads, Part 2: Light Emitting Diode (LED) Vehicle Traffic Signal Modules" (VTCSH Part 2). At this time, only the LED technology meets such requirements and therefore the specification includes terms specific to LED traffic signals. However, EPA is open to any other (non-LED) technology that meets both the EPA specification and ITE's VTCSH Part 1 or Part 2 requirements, or a future relevant ITE specification. Manufacturers are encouraged to contact EPA with such technology only if they are able to meet such requirements.

- 1) **Definitions:** Below is a brief description of an LED traffic signal and related terms as relevant to ENERGY STAR.
 - A. **Vehicular Traffic Signal:** A power-operated illuminated traffic control device, other than a barricade warning light or a steady illuminated lamp, by which traffic is warned or directed to take some specific action.
 - B. **Modules:** Standard 8-inch (200 mm) or 12-inch (300 mm) round traffic signal indications (balls). They consist of the light source and the lens (usually a sealed unit) that communicate movement messages (stop, caution or prepare to stop, and go) to drivers through red, yellow, and green colors. Arrow modules in the same colors are used to indicate turning movements. Pedestrian modules are used to convey movement information to pedestrians.
 - C. **Traffic Signal Head:** The combination of the traffic signal housing, with the modules (red, yellow, and green) installed in it. The head typically contains three modules and the necessary wiring, although it may also include arrow modules.
 - D. **LED Lamps or LEDs:** The individual light-emitting diodes (LEDs), which can be set on a circuit board in any arrangement.
 - E. **LED Traffic Signal:** The generic term used to describe the combination of signal heads or modules that use LEDs as the source of light. The combination also incorporates the housing unit at an intersection along with any internal components and support structures.

- 2) **Qualifying Products:** For the purposes of ENERGY STAR, LED traffic signal modules include the following:
 - A. LED Vehicular Traffic Signal Modules, including Arrow Modules
 - B. LED Pedestrian Signal Modules

Other (non-LED) technology products may be considered if they meet ITE's VTCSH Part 1 or 2 (or other relevant future ITE specification), as well as the requirements of this specification.

- 3) **Energy-Efficiency Specifications for Qualifying Products:** Products listed in Section 2 that meet the criteria outlined in Table 1 below and that meet the minimum performance requirements of the

appropriate ITE specification (either current or future) may qualify as ENERGY STAR. The wattage requirements in the table below are to be met by the individual module, not the traffic signal heads as defined in Section 1(C). These levels include power demand from the LED power circuit.

Table 1: Energy-Efficiency Criteria for ENERGY STAR Qualified Traffic Signal Modules

Module Type	Maximum Wattage (at 74°C)	Nominal Wattage (at 25°C)
12" Red Ball	17	11
8" Red Ball	13	8
12" Red Arrow	12	9
12" Green Ball	15	15
8" Green Ball	12	12
12" Green Arrow	11	11
Combination Walking Man/Hand	16	13
Walking Man	12	9
Orange Hand	16	13

- 4) Test Criteria: The products must meet the minimum performance requirements of the relevant ITE specification, and be tested under the conditions presented in Section 6.4.2 of the VTCSH Part 2.
- 5) Effective Date: The date that manufacturers may begin to qualify products as ENERGY STAR will be defined as the *effective date* of the agreement. The ENERGY STAR Traffic Signal specification is effective immediately.
- 6) Future Specification Revisions: ENERGY STAR reserves the right to change the specification should technological and/or market changes affect its usefulness to consumers, industry, or the environment. In keeping with current policy, revisions to the specification will be arrived at through industry discussions. Specifically with regard to traffic signals, EPA expects that revisions to this specification will be discussed once the ITE specification is final for arrows and pedestrian heads. In addition, discussion will be necessary once ITE compliant amber balls and arrows are developed and marketed by manufacturers.