

Standby Power: a Requirement for GSLs

FORTALECIMIENTO DE ESTÁNDARES DE EFICIENCIA ENERGÉTICA EN ILUMINACIÓN
Primera Reunión y Taller Presencial del Grupo Técnico de Eficiencia Energética (GTEE)

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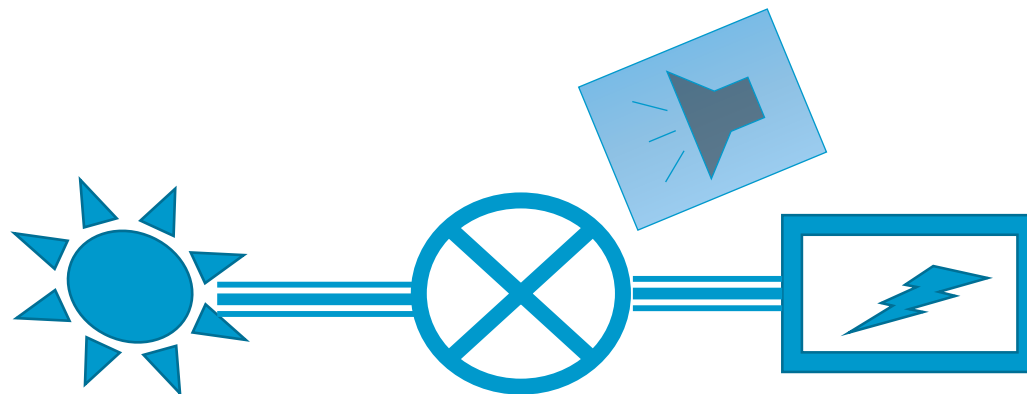
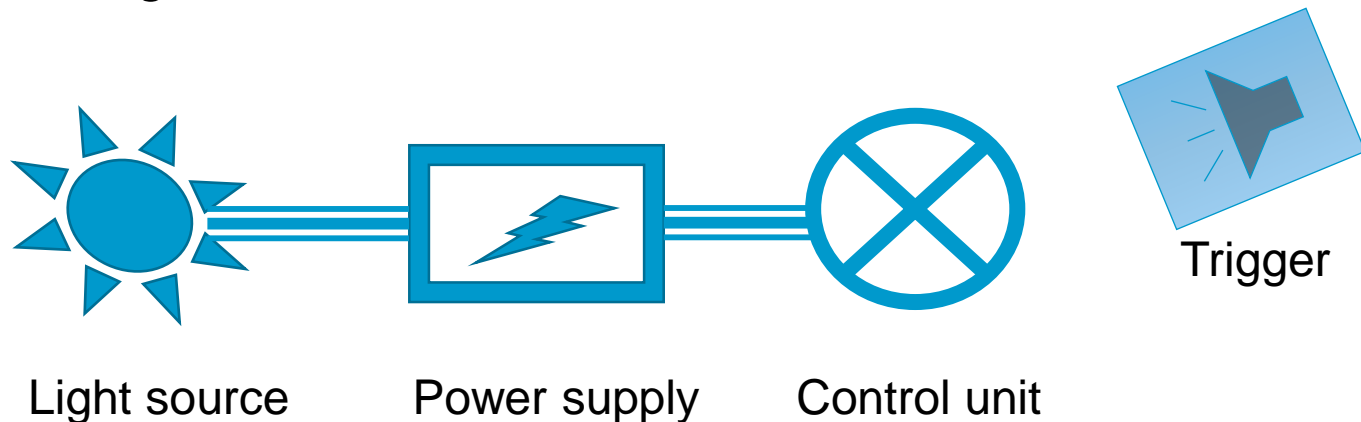
Recommendation and Discussion

What is Standby and where is it?

- Standby is a state (or mode) of electronic readiness (awaiting a trigger) where light is not being emitted from the light source
- Standby mode exists in connected lighting products of the form of:
 - Smart lamps
 - Some luminaires
 - Controllers for lamps and luminaires
- These connected lighting products have control units to receive the trigger

The Control unit

- The “control unit” is the lighting system component which interfaces between the various external communication options (which produce the trigger) and the power supply and the light source.



Trigger to switch from Standby to On-Mode?

- The trigger may be in the form of a control signal from:
 - An integrated sensor for:
 - Movement
 - Light
 - Sound
 - Power failure (backup battery), etc
 - The network (wired or wireless), generated by:
 - Sensors
 - Computers (manual or automated activation)

A broader definition is non-active modes

A variety of non-active modes can be considered for assessing, like:

- Standby mode
- Networked standby mode
- Off mode
- No-load mode

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- **Standby mode**
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- Off mode
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Measured Standby Power for smart lamps

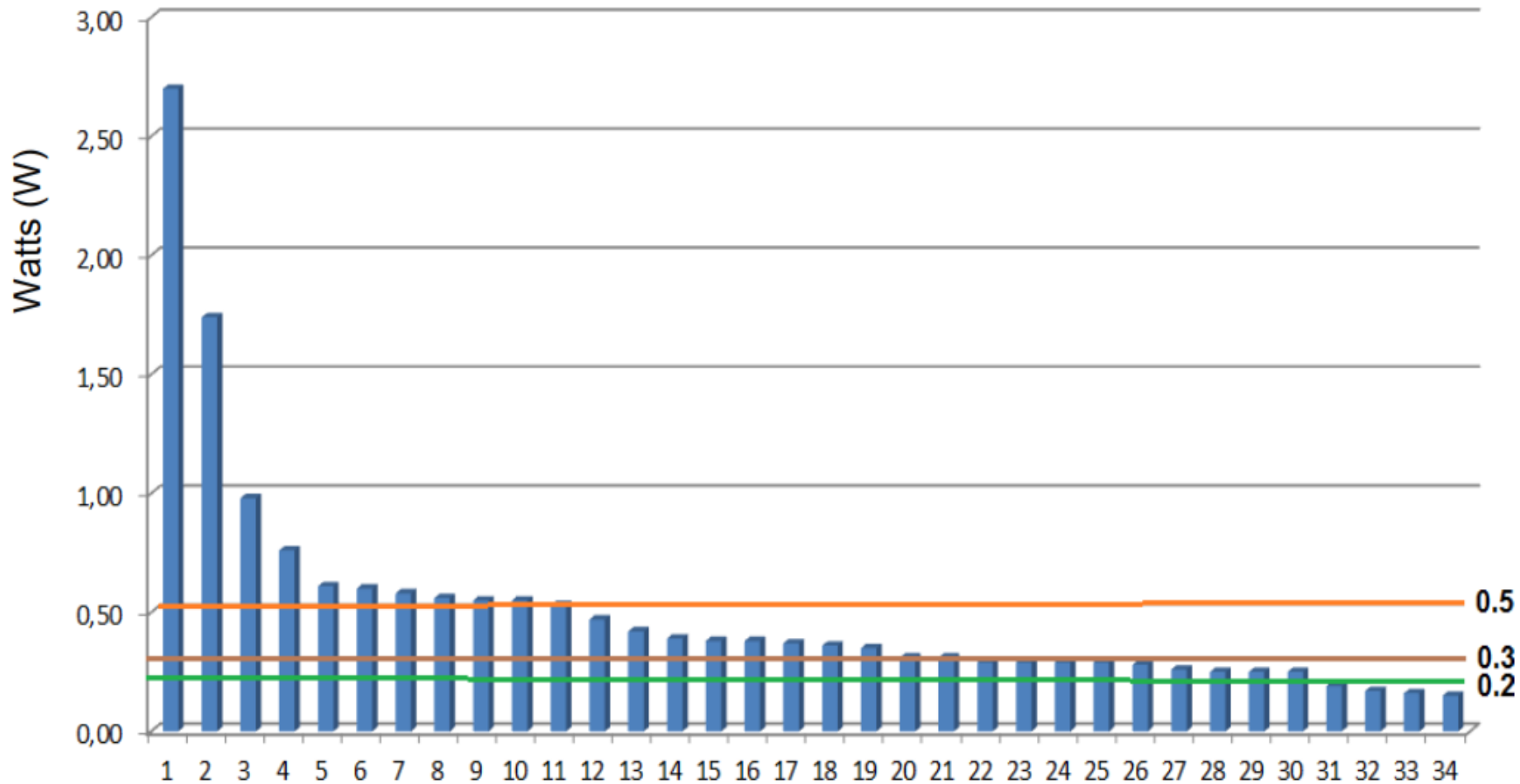


Figure 11. Standby power consumption for smart lamps

Impact of Standby Power on Annual Consumption

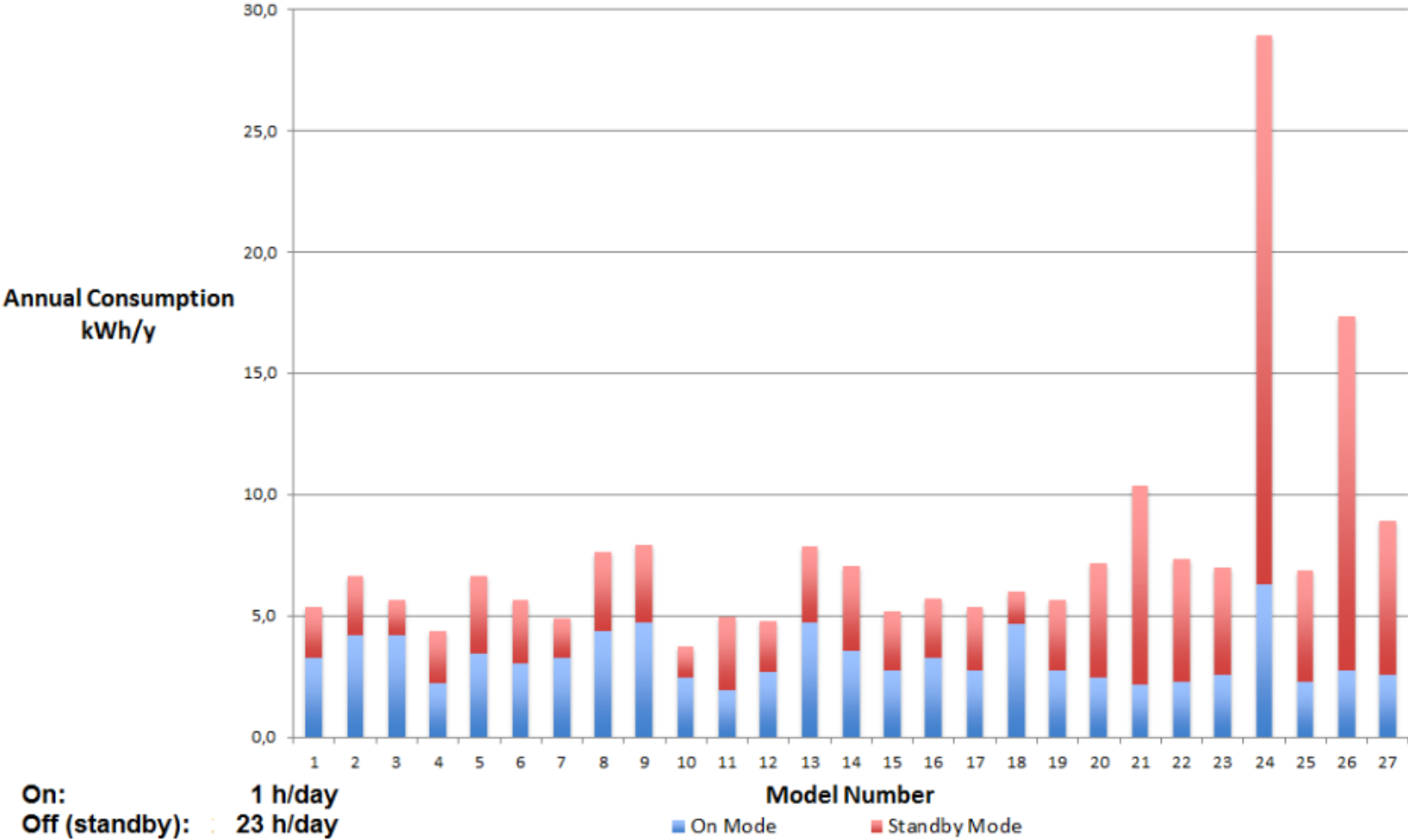


Figure 13. Annual energy consumption for 27 smart lamps models in operation 1 hour/day

Effective Efficacy due to Standby Power

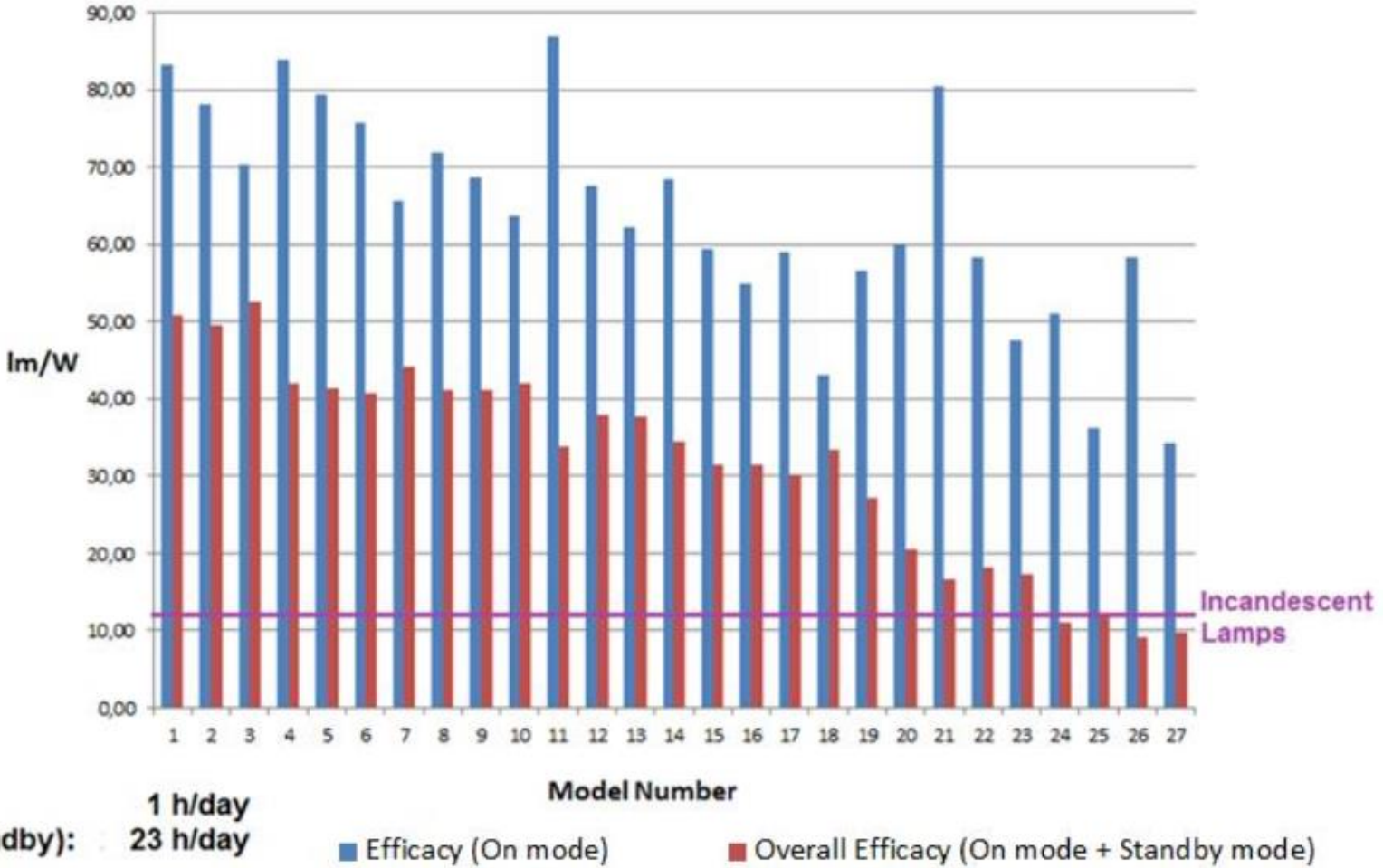


Figure 17. ON efficacy and overall efficacy for 27 smart lamps models in operation 1 hour/day

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What are the International Standards?

- IEC 63103 ED1 “Lighting equipment - Non-active mode power measurement”
- Currently in form of Committee Draft under Vote (34/621/CDV)

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Requirements in new EU lighting regulation

- The text below sets out the limits from the European regulation adopted by the European Commission on 1 October 2019:

The standby power P_{sb} of a light source shall not exceed 0,5 *W*.

The networked standby power P_{net} of a connected light source shall not exceed 0,5 *W*.

The allowable values for P_{sb} and P_{net} shall not be added together.

- The regulation also sets out requirements for standby power of separate control gear:

The no-load power P_{no} of a separate control gear shall not exceed 0,5 *W*. This applies only to separate control gear for which the manufacturer or importer has declared in the technical documentation that it has been designed for no-load mode.

The standby power P_{sb} of a separate control gear shall not exceed 0,5 *W*.

The networked standby power P_{net} of a connected separate control gear shall not exceed 0,5 *W*. The allowable values for P_{sb} and P_{net} shall not be added together.

Discussion and Next Steps

- Are there stand-by power limits in any other regulations in the region?
- How should the regulation accommodate stand-by power functions in smart lamps?
- Discussion on limits

Thank you, any questions?

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