
Project: IEEE P802.15 Working Group for Wireless Personal Area Networks (WPANs)

Submission Title: [Suggested dimming scope for TG7 standardization]

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Abstract: [Suggestion on scope of dimming for TG7 standardization]

Purpose: [Contribution to IEEE 802.15.7 VLC TG]

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Scope of dimming support

The standard should not specify the type of dimming interaction or dimming method

Only items that are dimmer independent should be specified in the current standard

If information (such as the dimming level or dimming type or the fact that dimming is being enabled) from the dimmer is made available, it should be utilized to support dimming

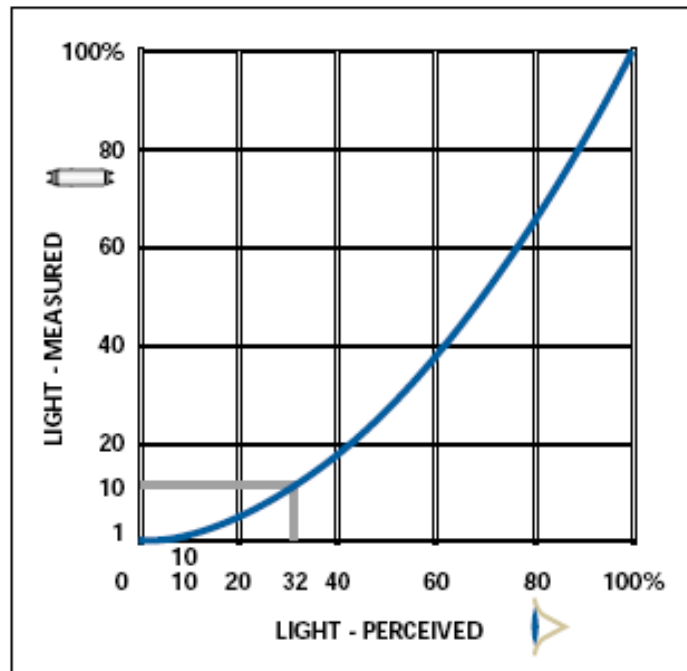
Dimming support is applicable for infrastructure/illumination device class

Dimming control requirements

Ref : 15-09-0369-00-0007-dimming-considerations-for-visible-light-communication.pdf

Due to non-linear human eye response to light, dimming levels as low as 0.1% must be supported (square law phenomenon)

- DALI provides 0.1 – 100% dimming levels

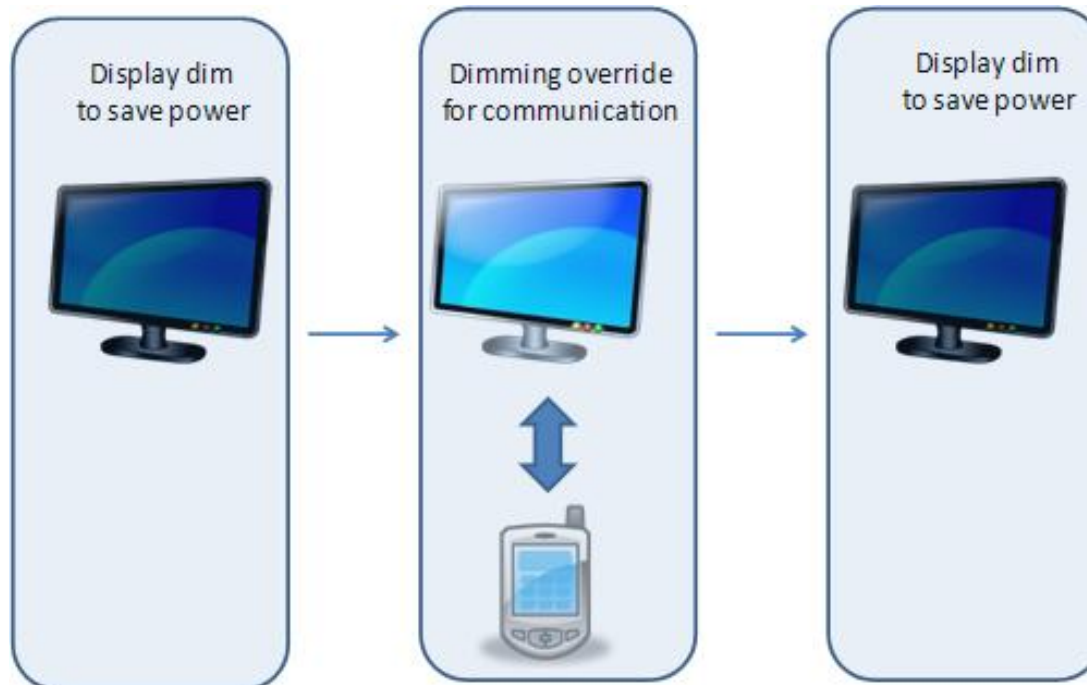


Source: Hi-lume by Lutron data sheet,
<http://www.lutron.com/CMS400/WorkArea/downloadasset.aspx?id=10049>

Suggested scope for dimming in TG7

(1) Provide dimming override capability to dimmer for VLC communication (irrespective of dimming type)

- Dimmer may or may not accept this input



Suggested scope for dimming in TG7

(3) Adjust MAC TX schedule of infrastructure device for meeting dimming requirements

Ratio of ON/OFF (including PHY) = dimming ratio

Suggested scope for dimming in TG7

(4) Provide support for link adjustment timers if dimming is to be enabled

Use milliseconds of time for link to adjust data rates/ MAC schedule

Delay not perceived by human eyes

