

Connected Lighting Module (CLM)

Product Capabilities



Introduction

This document provides a set of specifications for the OSRAM Connected Lighting Module (CLM).

The Connected Lighting Module (CLM) is a key component in a Light Management System (LMS). It enables luminaires to be connected to any LMS that is based on ZigBee® Home Automation communication protocol. Individually addressable, the CLM enables each luminaire to be independently controlled and configured to best meet the needs of the facility. For additional information regarding this product, visit www.osram-america.com/controls.

Item Number	Ordering Description	Communication Network	Dimming Protocol
45678	ZBHA-CLM DIM	ZigBee® Wireless	0-10V

Clusters

Clusters are a group of commands and attributes that define what a device can do. A device can support multiple clusters to do a variety of tasks. The majority of clusters are defined by the ZigBee Alliance and listed in the ZigBee Cluster Library. There are also profile specific clusters that are defined by their own ZigBee profile like Home Automation and Manufacturer Specific clusters.

Each cluster consists of Attributes that are used to acquire information and to set preferences on a device. The two main types are Read and Write. The data type and values are specified by cluster.

On the following pages are the set of clusters that are found in the CLM.

1 Basic Cluster

Attributes

Attributes	Client / Server	Parameter type
ZCL version	Server	0x01
Application version	Server	0x06 (as of May, 1st 2016)
Stack version	Server	0x36
Hardware version	Server	0x01
Manufacturer name	Server	OSRAM
Model identifier	Server	OSRAM ZBHA-CLM DIM
Date code	Server	20151218
Power Source	Server	0x1

Commands: No command

2 Identify Cluster

Attributes

Attributes	Client / Server	Parameter type
Identify time	Server	Unsigned 16-bit

Commands

Name	Directions
Identify Query Response	Server => Client
Identify	Client => Server
Identify Query	Client => Server

3 Groups Cluster

Attributes

Attributes	Client / Server	Parameter type
Name Support	Server	Bitmap 8

Commands

Name	Directions
Add Group Response	Server => Client
View Group Response	Server => Client
Get Group Membership Response	Server => Client
Remove Group Response	Server => Client
Add Group	Client => Server
View Group	Client => Server
Get Group Membership	Client => Server
Remove Group	Client => Server
Remove All Group	Client => Server
Add Group Identifying	Client => Server

4 Scene

Attributes

Attributes	Client / Server	Parameter type
Scene Count	Server	Unsigned 8-bit
Current Scene	Server	Unsigned 8-bit
Current Group	Server	Unsigned 16-bit
Scene Valid	Server	Boolean
Name Support	Server	Bitmap 8

Commands

Name	Directions
Add Scene Response	Server => Client
View Scene Response	Server => Client
Remove Scene Response	Server => Client
Remove All Scene Response	Server => Client
Store Scene Response	Server => Client
Get Scene Membership Response	Server => Client
Add Scene	Client => Server
View Scene	Client => Server
Remove Scene	Client => Server
Store Scene	Client => Server
Recall Scene	Client => Server
Get Scene Membership	Client => Server

5 On/Off

Attributes

Attributes	Client / Server	Parameter type
On/Off	Server	Boolean

Commands

Name	Directions
Off	Client => Server
On	Client => Server
Toggle	Client => Server

6 Level Control

Attributes

Attributes	Client / Server	Parameter type
Current Level	Server	Unsigned 8-bit

Commands

Name	Directions
Move To Level	Client => Server
Move	Client => Server
Step	Client => Server
Stop	Client => Server
Move To Level With On/Off	Client => Server
Move With On/Off	Client => Server
Step With On/Off	Client => Server
Stop With On/Off	Client => Server

7 Commissioning (Cluster ID: 0x0015)

Attributes

Attributes	Client / Server	Parameter type
Extended Pan ID	Server	IEEE address
Channel Mask	Server	Bitmap 32
Startup Control	Server	Enum 8
Network Key	Server	Security Key
Preconfigured Link Key	Server	Security Key

Commands

Name	Directions
Restart Device Response	Server => Client
Save Startup Parameters Response	Server => Client
Restore Startup Parameters Response	Server => Client
Reset Startup Parameters Response	Server => Client
Restart Device	Client => Server
Reset Startup Parameters	Client => Server
Save Startup Parameters	Client => Server

8 Over the air boot-loading (Cluster ID: 0x0019)

Attributes

Attributes	Client / Server	Parameter type
OTA Upgrade Server ID	Client	IEEE_address
OTA Upgrade Status	Client	Enum 8
Manufacturer ID	Client	Unsigned 16-bit
Image Type ID	Client	Unsigned 16-bit

Commands

Name	Directions
Image Notify	Server => Client
Query Next Image Response	Server => Client
Image Block Response	Server => Client
Upgrade End Response	Server => Client
Query Next Image Request	Client => Server
Image Block Request	Client => Server
Image Page Request	Client => Server
Upgrade End Request	Client => Server
Query Specific File Request	Client => Server

9 Ballast Configuration (Custom Cluster ID 0xFC01)

Attributes

Attributes	Client / Server	Parameter type
Physical Min Level	Server	Unsigned 8-bit
Physical Max Level	Server	Unsigned 8-bit
Ballast Status	Server	Bitmap 8
Min Level	Server	Unsigned 8-bit
Max Level	Server	Unsigned 8-bit
Power On Level	Server	Unsigned 8-bit
Power On Fade Time	Server	Unsigned 8-bit
Off State Permitted	Server	Boolean
Dimming Light Curve Active	Server	Boolean

Commands: No command

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