

DimLight

This LED dimmer module is designed for simple dimming for all Optodrive versions with integrated driver (ID). It is very simple to use when an integrated on/off and dimming is required.

V 1.4



DimLight

Object:
Datasheet DimLight

Document no:
n/a

Revision:
1.4

Page:
Page 2 of 14

Author:
SL

Date:
2010-09-23

Pages for reference:

Pages for reference:	2
Introduction.....	3
Short form Characteristics.....	4
Article number structure.....	6
Characteristics for the dimmer signal	7
Wiring diagram.....	8
Dimensions LED Module:	11
Lifetime (Calculated)	13
Precaution for use	14



DimLight

Object:
Datasheet DimLight

Document no:
n/a

Revision:
1.4

Page:
Page 3 of 14

Author:
SL

Date:
2010-09-23

Introduction

This LED dimmer module is designed for simple dimming for all Optodrive versions with integrated driver (ID). It is very simple to use when an integrated on/off and dimming is required.

- Just connect power and connect the Optodrive module to light it up
- Low voltage 12-36VDC
- Simple fitting – no caps, just screws and plug
- Operates for 50,000 hours
- Maximum energy efficiency



Short form Characteristics

Mechanical	
Board dimensions:	25 x 44 mm diameter
Connectors power:	Screw Max 0.75 mm ²
Connectors out:	JST PH

Mechanical box	
Height:	14.1 mm
Diameter	47 x 28 mm
Assembly holes:	3.3 mm

Electrical	
Number of outputs:	1
Power supply:	12 - 36VDC
Max current out:	2A
Reversed polarity protection:	Yes
Transient protection:	Yes
Overvoltage protection:	No
Dimming signal transient protection:	Yes

Dimming Signal	
PWM high level:	4 – 7V
PWM low level:	0 – 0,5V
PWM frequency¹:	100 – 20kHz



DimLight

Document no:
n/a

Revision:
1.4

Page:
Page 5 of 14

Object:
Datasheet DimLight

Author:
SL

Date:
2010-09-23

Environmental operating conditions:

Temperature Ambient T_a:	Max 50°C
Temperature range on PCB:	-40°C to 65°C (Absolute maximum temp T_c 65°C)
Relative Humidity:	10-75%
Ambient air pressure:	500-1060 hPa



Article number structure

Template:

Name V.C1.C2.C3

Example:

DimLight Switch Box.S.H.H

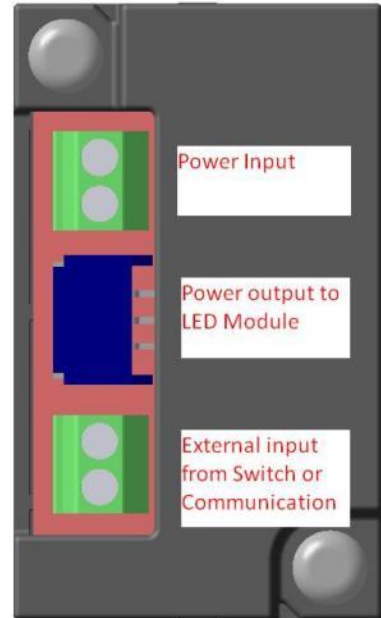
Name: Module name

DimLight Switch

DimLight Pulse

DimLight 0-10V

DimLight Dali



V:	Version
PCB	PCB only
Box	PCB in box

C1:	Connector 1, Power Input Connector
S	Screw connector
H	Header connector (Snap in connector)

C2:	Connector 2, Power Output Connector
S	Screw connector
H	Header connector (Snap in connector)

C3:	Connector 3, Dimming signal Input Connector
S	Screw connector
H	Header connector (Snap in connector)



Characteristics for the dimmer signal

Reference information about the LED module that are dimmed.

The OptoDrive LED Module is dimmable by means of an external dimmer signal located in the centre of the power supply connector.

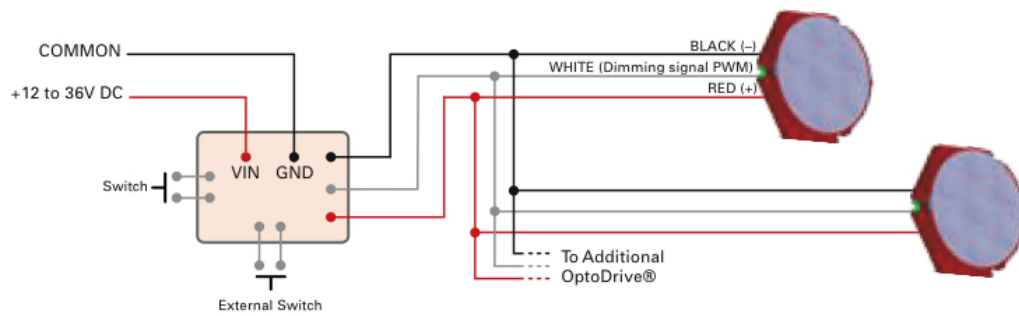
The dimmer signal is preferably supplied from an opto-isolated signal source (open-collector) referred to the power ground. The rise and fall time should be kept as low as possible to reduce power dissipation. The signal source must be able to sink a current of $V_{in} / 90k \text{ A}$. Note that the power dissipation increases with higher dimming switching frequency.

- The LED array is “ON” when the dimmer signal is left floating (or not connected).
- The LED array is “OFF” when the dimmer signal is grounding.

Several OptoDrive can be connected in parallel without degradation in performance. However, due to the lowered impedance of the internal voltage divider, the efficiency will be slightly degraded.

Wiring diagram

SINGLE COLOUR WITH SIMPLE DIMMING





DimLight

Document no:
n/a

Revision:
1.4

Page:
Page 9 of 14

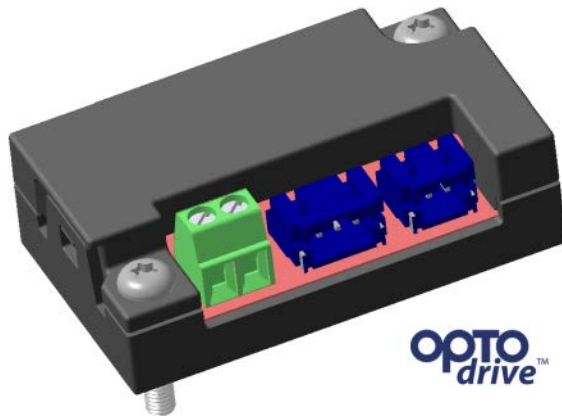
Object:
Datasheet DimLight

Author:
SL

Date:
2010-09-23

Options

DimLight Switch

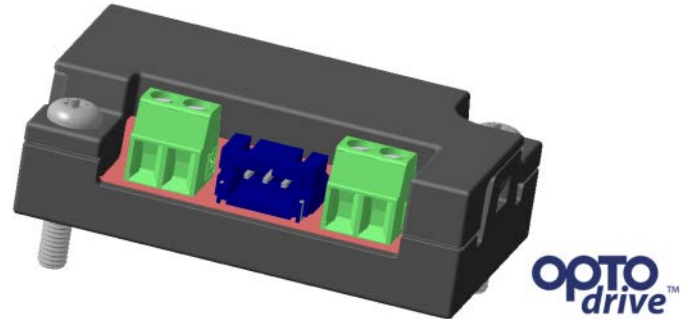


Mainly used in application with external switch that is of momentary type.

Connector 1 from the left is Power In, Connector 2 is connected to the LED Module of type ID and the connector 3 is a connection to the momentary switch.

DimLight DALI

Used in application with Dali networks as a nod for a LED module of type ID. Connector 1 from the left is Power In, Connector 2 is for the LED module and Connector 3 is for the DALI bus.





DimLight

Document no:
n/a

Revision:
1.4

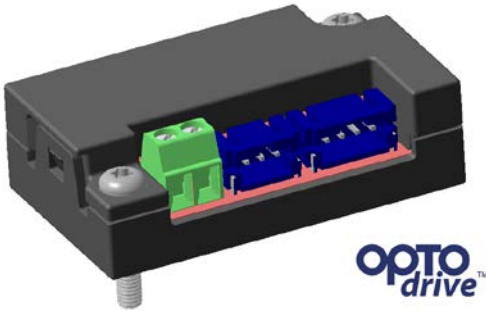
Page:
Page 10 of 14

Object:
Datasheet DimLight

Author:
SL

Date:
2010-09-23

DimLight Puls



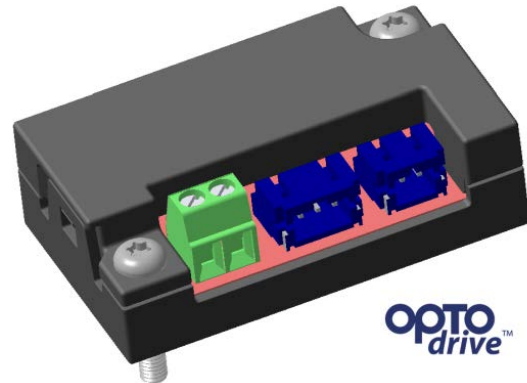
This is to be used with an encoder. By using an encoder in an application the real feedback to the end user can be made, both by the eyes and by the vibration inside the encoder that are felt during dimming.

- Connector 1 Power in
- Connector 2 I/O to Optodrive LED module type ID
- Connector 3 To the PulsSwitch

DimLight 0-10V

The 0-10V version of DimLight is to be used together with standard 0-10V dimmers.

- Connector 1: Power in
- Connector 2: I/O to Optodrive LED module type ID
- Connector 3: To the 0-10V dimmer





DimLight

Object:
Datasheet DimLight

Document no:
n/a

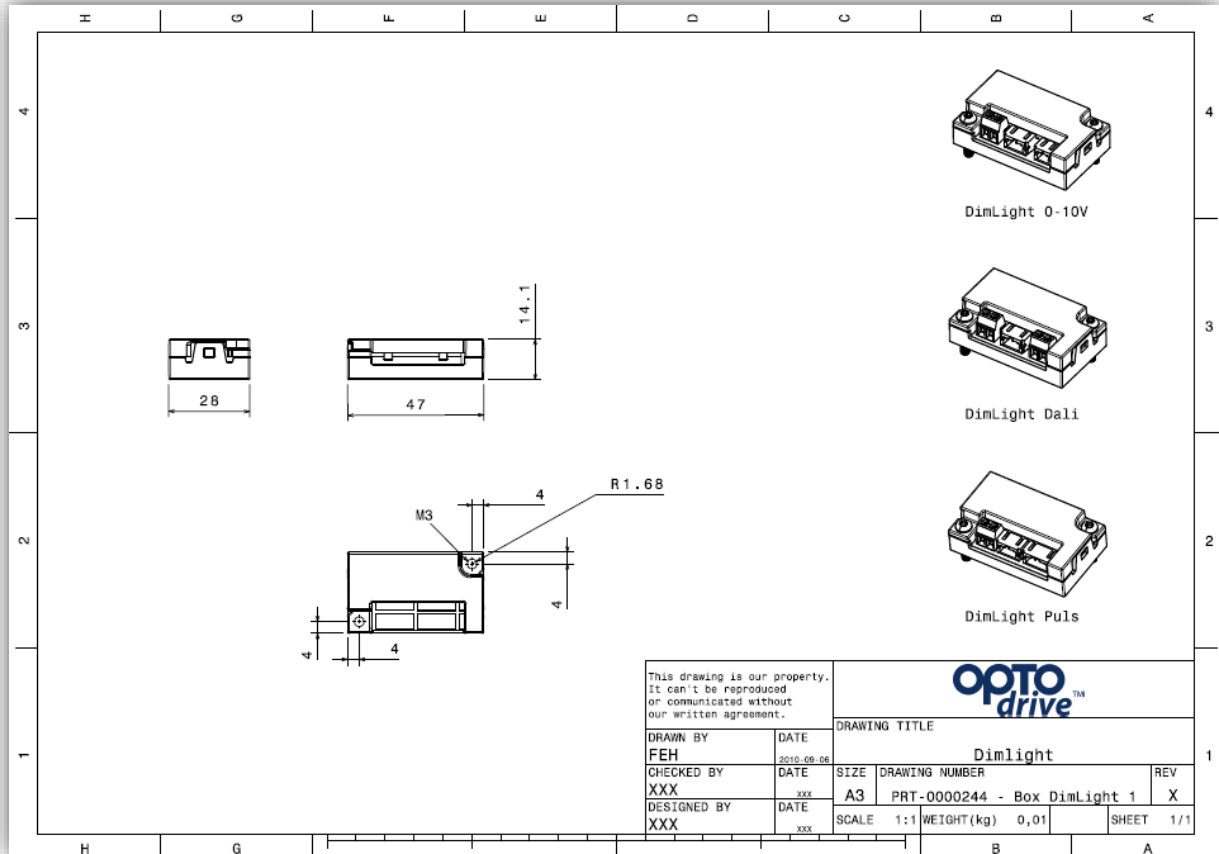
Revision:
1.4

Page:
Page 11 of 14

Author:
SL

Date:
2010-09-23

Dimensions LED Module:

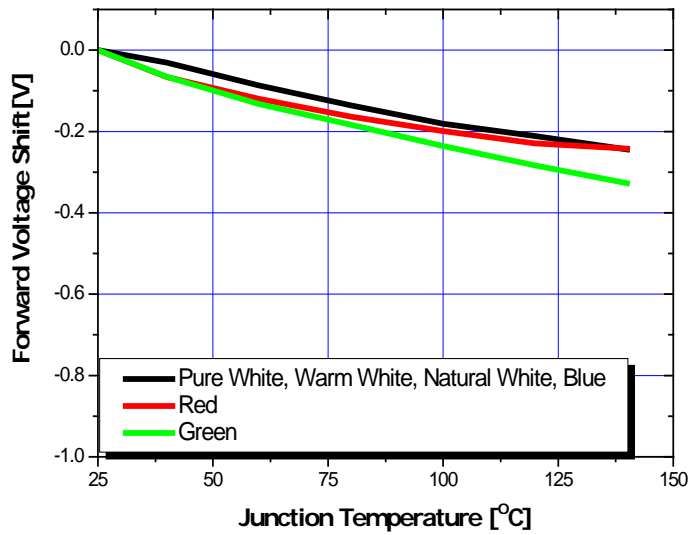




Electro Optical data

No change in the CCT or IEC 1931 is taking place when the Optodrive is connected and being dimmed. The colour coordinates are totally stable.

Junction Temperature Characteristics



The power load is lowered to the unit Optodrive when is dimmed down so there can be a difference in light output due to cooler running of the LED module.



DimLight

Document no:
n/a

Revision:
1.4

Page:
Page 13 of 14

Object:
Datasheet DimLight

Author:
SL

Date:
2010-09-23

Lifetime (Calculated)

The lifetime is calculated at the maximum temperature recommended at the T_c (measuring point). It is important not to exceed this recommendation. The use of a dimmer will extend the life time of the LED module significantly.



Precaution for use

- This device should not be used in any type of fluid such as water, oil, organic solvent etc.
- When the LEDs are illuminating, operating current should be decided after considering the package maximum temperature.
- The appearance and specifications of the product may be modified for improvement without notice.
- Long time exposure of sunlight or occasional UV exposure will cause lens discoloration.

ROHS Compliant

All our modules meet the Restriction of Hazardous Substances (RoHS)!

There has been a growing consensus that Lead Free Systems should increase for the safety of our environment. It is a very serious problem that lead and other harmful materials are being used in commercial and industrial products, causing more and more environmental problems. This has led to regulations such as RoHS (Restriction of the use of certain Hazardous Substances) from the EU and the Japan Ministry of Trade and Industry (MITI). All LED makers providing products to these countries should comply with these restrictions. In order to meet RoHS regulation, Optoga is strictly implementing a ban on lead and other hazardous materials in its products. This is in compliance with our responsibilities as good corporate citizens.

Design for Environment:

According to the EU-directive 2002/95/EC (RoHS) the following substances must not be used in this product

- Lead (Pb) alloys
- Mercury (Hg)
- Cadmium (Cd)
- Chromium (6+) compounds