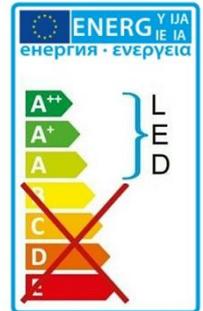


LEDIM/C6



Dim2warm LED Engine with 2-wire Interface
Part-No.: LC6-G1

Made in Germany



Features

- Dim2warm LED engine: Dimmed light gets warmer with decreasing brightness, from cold white to candle light
- High efficiency LEDs (> 90 lm/W)
- 600 lumens at 4000 K
- High CRI > 90 typ.
- Square format 19 mm – ready to fit holders for popular COBs
- Unique 2-wire interface enables use of decorative cabling
- Mating with LEDIM's D1 series of flicker-free dimmers

Applications

- Household appliances
- Decorative lighting
- Restaurant, bar & hotel
- Task lighting
- Architectural lighting

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1. Product Overview

The C6 LED engine is your solution for designs, which require a compact, efficient, dimmable “COB-like” Dim2Warm engine with the additional benefits of a 2-wire cabling. C6 comes in meaningful variants offering maximum flexibility for your lighting project – while always providing best light quality. Standard COB holders might be used for adapting or even direct wiring and mounting, depending on the particular requirements.

LEDIM's mating dimming electronics provide 100% flicker-free, reliable and distortion hardened dimming by several dimming controls.

2. Ordering Information

2.1 Options and Part Numbers

Part Number	Product	Dimming Characteristics
LC6-G1	C6 600 lm	linear

3. Technical Data

3.1 Model: C6 600 lm

Parameter	Value	Range	Unit
Dimensions	L = 19 x W = 19	+/- 0.15	mm
LES diameter	8	+/- 0.15	mm
Holder cutout diameter	17	+/- 0.15	mm
LED Count	4 + 3 + 2	-	-
Light Color(s)	Cold White, Neutral, Warm White	-	-
CCT	4000, 2700, 2000	-	K
Max. Luminous Flux ¹	600	+/- 50	lm
CRI	> 90 typ.	-	-
T _c max ²	+70	-	°C
Storage Temp.	- 40 ... +80	-	°C
Humidity	non condensing	-	-
Max. Forward Voltage (V _F)	13	12.7 ... 13.4	V DC
Min. Forward Voltage (V _F)	5	-	V DC
Max. Operating Current ³	0.5	-	A
Max. Power Dissipation	6.5	+/- 0.5	W

¹ At 100% dimming.

² To be measured at max. luminous flux.

³ Depending on input voltage.

3.2 Outline Dimensions

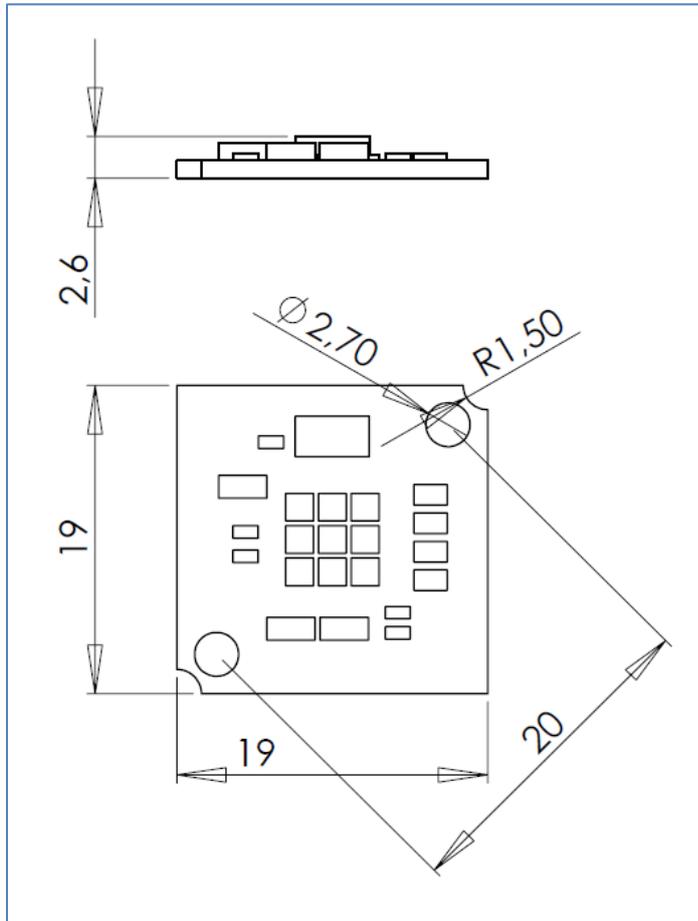


Figure 1: Outline Dimensions

3.3 Zhaga Compatibility

The device is mechanically fully compatible to Zhaga Book 12 (<http://www.zhagastandard.org/books/book12/>), category C19x19. It can also be used together with standard holders with screw hole separation distance of 35 mm (Zhaga Book 10 <http://www.zhagastandard.org/books/book10/>, category D50).

3.4 Dimming Functionality and Characteristics

LEDIM/C6 is designed to change the color temperature in a very similar way as incandescent bulbs change their light when getting dimmed. C6 achieves this by mixing cool white, warm white and PC amber along its dimming characteristics curve to maintain high CRI over the widest range as possible. See the figure below for a graphic visualization of the dimming characteristics.

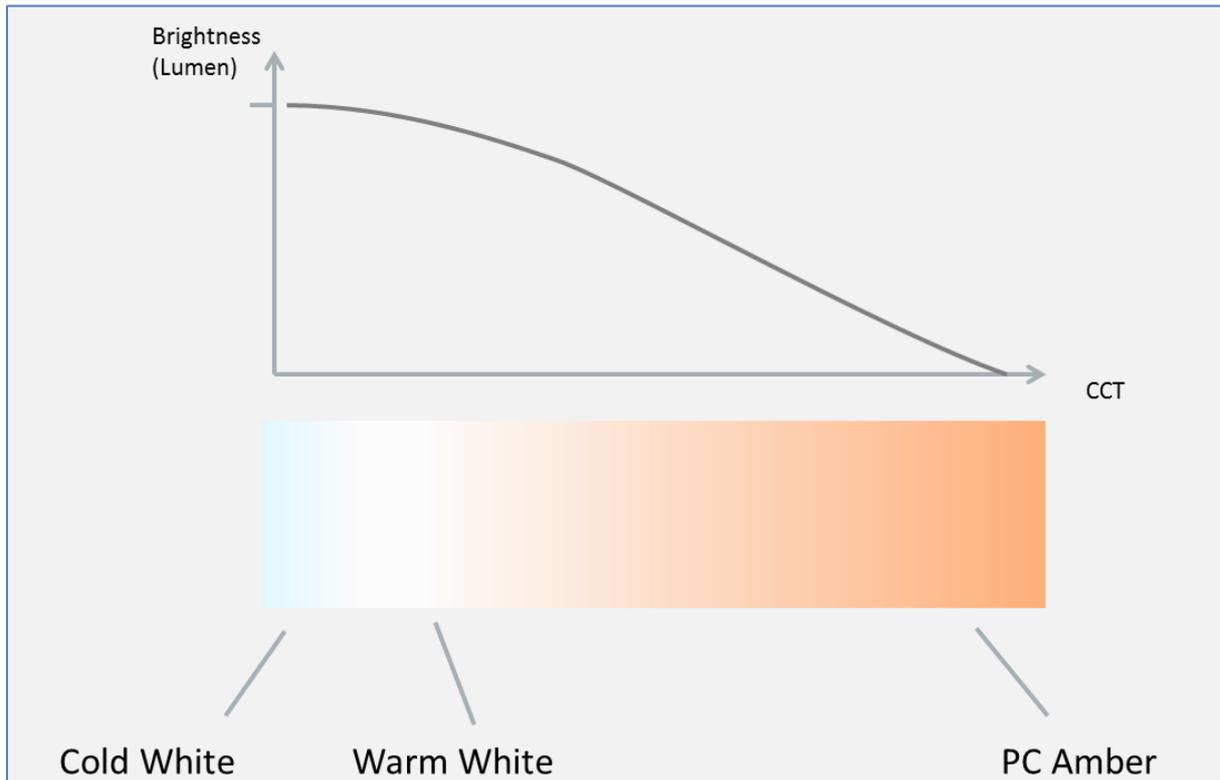


Figure 2: Dimming Characteristics

To guarantee best flicker-free light quality, C6 should be used together with LEDIM's mating, 100% flicker-free dimming electronics like the D1 or D2 family.

4. Integration Instructions

4.1 Mechanical Requirements



CAUTION:

The device must not be stressed. The LED engine area flatness must be ≤ 0.1 mm.

4.2 Thermal Requirements



CAUTION:

The device must never be operated without a proper cooling measure (heat sink)! The heat sink might be dimensioned to fit the thermal dissipation loss (please see P_{max} , chapter 3.1). T_c must always be held in the operating range (see chapter 3.1). T_c must be measured at 100% dimming (full 4000 K)! For the position of the T_c measuring point see figure below:

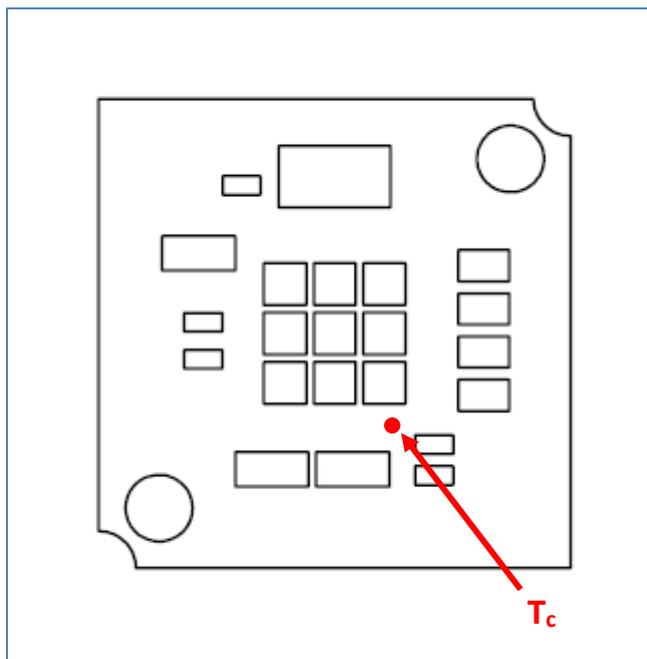


Figure 3: Position of T_c Measuring Point

4.3 Electrostatic Requirements



The device must be protected against electrostatic discharge during manufacturing, maintenance and during regular operation. Users must neither touch the device nor the components on it.

4.4 Typical Integration

C6 is typically integrated into a luminaire by mounting it on an even surface (see 4.1), capable of purging the thermal losses (see 4.2) to the surrounding environment.

⚠ CAUTION: Never use the device without an appropriate cooling appliance. The device must not be sealed, casted/backfilled or covered to ensure suitable airflow.

C6 is usually fixed by two M2.5 screws to its counterpart. Thermal paste⁴ should be used to ensure a proper heat transmission. See figures below for a typical arrangement for direct mount or mounting with a standard COB socket/holder:

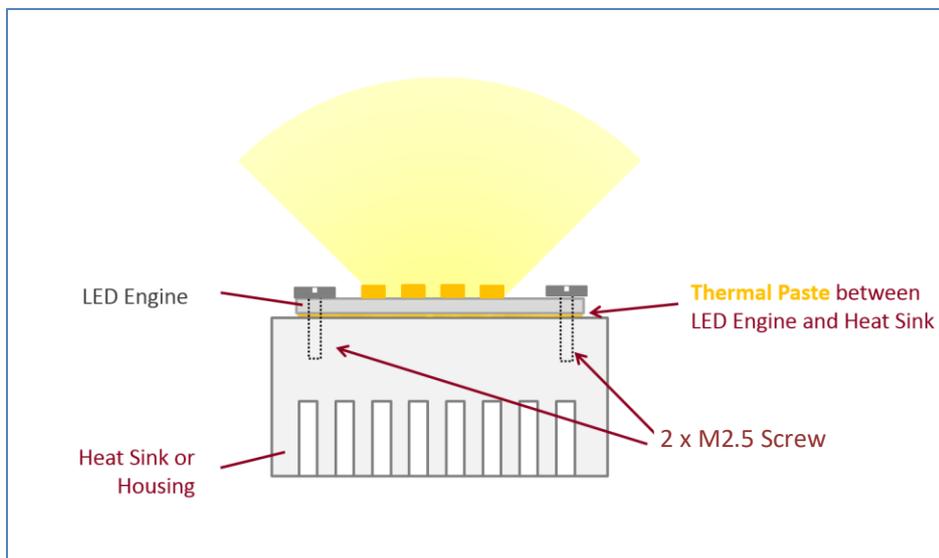


Figure 4: Typical Mounting without socket/holder

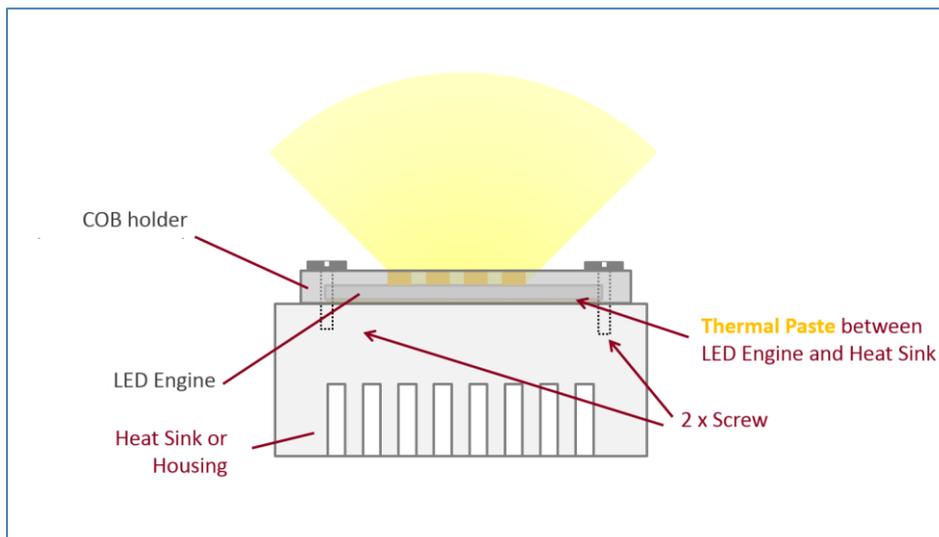


Figure 5: Typical Mounting with socket/holder

⁴ Use Thermal Paste with 10W/mK or better.

4.5 Mounting the Device

Use these holes for direct mounting the device on its counterpart with two M2.5 screws. The length of the screws depends on your application and should be chosen reasonable.

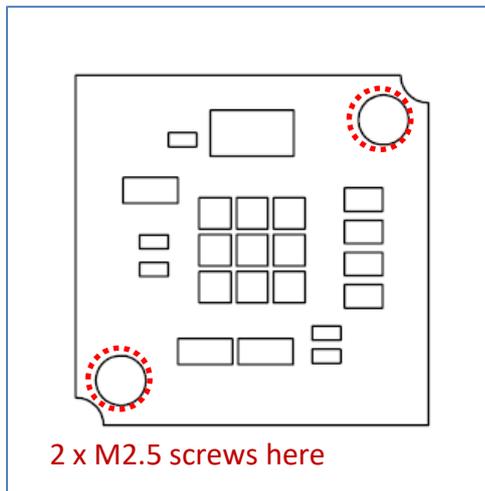


Figure 6: Device Mounting Holes



CAUTION:

Before mounting, an appropriate heat transfer must be applied.

4.6 Optional Installation of a Light Forming Optics

C6 is compatible with various holders capable of mounting color mixing optics (e.g. from Ledil Oy), refer to **Fehler! Verweisquelle konnte nicht gefunden werden.** for further details.

4.7 Connector Pinout

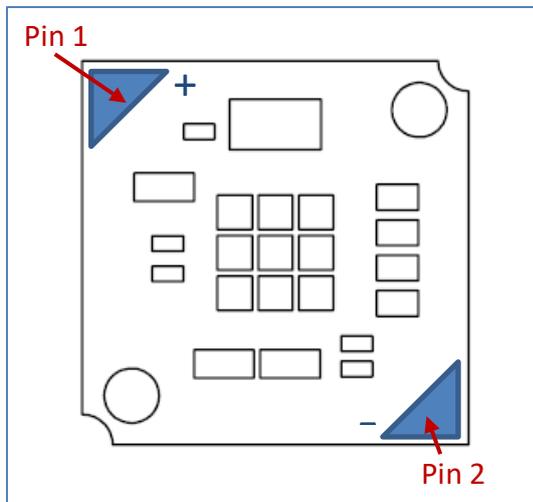


Figure 7: Connector Pinout

Pin 1: Anode (V₊)

Pin 2: Cathode (V₋)

5. Operation

C6 must be operated within its operation conditions (see 3.1). The device needs constant current, provided by a sufficient dimming device. For best results, the constant current must not be adjusted using pulse width modulation (PWM) or similar methods, but must be adjusted by reducing the value of the current (analog dim).

LEDIM recommends the LEDIM D1 family for best dimming results and customer experience.

6. Maintenance/Service

The device has no serviceable parts inside. Thus, the device itself is to be the field replaceable unit (FRU). When replacing the unit, please ensure to apply the same measures as during the manufacturing process (e.g. the use of thermal paste, screw torque etc.).

7. Standard Compliance

LEDIM devices and accessories comply or will comply with all relevant standards and guarantee safe operation.

- Conformity: CE
- Environment: RoHS
- EMC: EN 55015, EN 61547

8. Safety Information and Precautions

- The device must only be utilized for its intended use.
- The LEDs are hot during operation and must never be touched.
- Eye safety/photobiological safety: Even though all used components comply with EN 62471, direct viewing into the light emitting areas must be avoided under all circumstances. Measures must be taken to prevent users from directly viewing into the light emitting areas.
- The device itself and all its components must not be mechanically stressed.
- During assembly, manufacturing and operation conducting paths on the circuit board must not be damaged or destroyed.
- To avoid mechanical damage to the connecting cables, the module should be attached securely to the intended counterpart. Heavy vibration should be avoided.
- To operate the device safely, it is absolutely necessary to operate it with an electronically stabilized power supply protecting against short circuits, overload and overheating.
- To ease the luminaire/installation approval, power supplies and additional electronic control gear should carry the CE mark and must be certified. The declarations of conformity must include the appropriate standards. Check for the mark of an independent authorized certification institute.
- Installation of LED modules (with power supplies) needs to be made with regard to all applicable electrical and safety standards. Only qualified personnel should be allowed to perform installations.
- Correct electrical polarity needs to be observed. Wrong polarity will destroy the module and might cause further damages.
- Pay attention to standard ESD precautions when installing the module.
- The module, as manufactured, has no conformal coating and therefore offers no inherent protection against corrosion.
- Damage by corrosion will not be honored as a materials defect claim. It is the user's responsibility to provide suitable protection against corrosive agents such as moisture and condensation and other harmful influences.
- If the IP rating of the fixture should be higher than IP20, the design of the housing should be according to the IP standards in the application.
- Pay attention not to exceed the maximum operation temperature at T_c point, especially when the device is used in enclosed environment. Appropriate measures must be taken.

Room for your notes and sketches:

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