

CoolLED

PRO

LED DRIVERS

CASAMBI

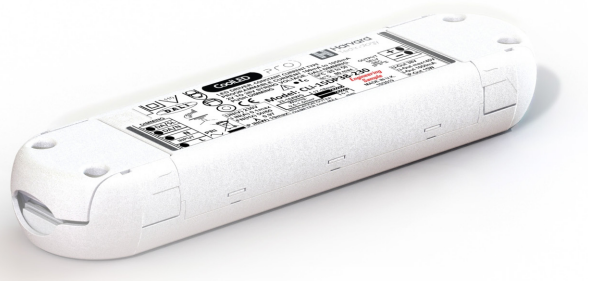
CLi15 (15 watt)

15W (up to 1050mA)

New to Harvard's CLi LED driver range is a Casambi model featuring the same high dimming accuracy, safety and reliability in an ultra slim compact format.

This new addition to the CoolLEDpro range offers ultra low dimming, with all the benefits of the Casambi wireless control and range of programmable dimming features. Through the convenience of the Casambi app and with exceptionally low flicker performance over the full operating range means the CLi range can be set to suit the most demanding applications.

- Wireless controllable by Bluetooth 4.0 Smart device
- Range between drivers - 35 meters
- Up to 4dBm output power
- -93dBm Rx sensitivity
- Integrated antenna
- Mesh network
- Ultra Compact- Fits through a 40mm hole
- Support for 1-18 LEDs
- Isolated output
- Programmable current available
- Programmable dimming curve options
- Smooth dimming to 0.1%
- Low inrush current
- Exceptionally low LED flicker. Near perfect light quality
- Passes IEEE1789:2015
- Designed in the U.K.



Technical Highlights

- Fully programmable in 1mA step increments
- Less than 1% flicker at 100Hz/120Hz
Meets IEEE1789:2015 'No Effect' Region 1Hz to greater than 2kHz
- Minimum dimming of 350µA - 25 bit dimming resolution
- Small size 21mm x 39.5mm x 133mm (149mm remote version)
- Input voltage range 220-240VAC
- Remote mount version (order end caps separately)
- Up to 15 Years Operation (See Driver lifetime graph for more details)
- Up to 85% efficiency
- Power factor corrected (0.97)
- Operation up to 50°C ambient
- Supports a large LED string voltage range - 2V to 38V or 4.5V to 52V (model dependent)

- Self-resetting thermal trip
- Mains to LED output: Reinforced isolation 3kV
- Standby mode
- LED lamp fault reporting
- Surge protection 2kV Differential, 4kV Common mode

LOW
Flicker



Technical Specification

| | 15W | | | | | |
|--|---|-----|-----|----|-----|-----|
| Mains input voltage | 220 to 240VAC Nominal | | | | | |
| DC input voltage | 220 - 240VDC Nominal / 176 -280VDC Operational range | | | | | |
| Input Current | 0.1A | | | | | |
| Input Power | 19W Max | | | | | |
| Emergency supply currents | @220VDC - 83mA (±10%) / @240VDC - 76mA (±10%) | | | | | |
| Driver emergency output factor (EOF _f) | 1.00 (Light output on AC or DC supply is identical) | | | | | |
| Mains frequency | 0/50/60Hz | | | | | |
| 100/120 Hz ripple | <1% | | | | | |
| Flicker | IEEE1789:2015 compliant with NO RISK category | | | | | |
| Mains surge protection | 4kV common-mode 2kV differential-mode | | | | | |
| Input-output isolation | 3kVAC rms | | | | | |
| Mains inrush current | 25A peak decaying to zero over 30µS (0.1R + 100µH mains impedance) | | | | | |
| Number drivers per MCB (maximum typical) | B6 | B10 | B16 | C6 | C10 | C16 |
| | 35 | 60 | 100 | 45 | 75 | 120 |
| Output protection | Overvoltage, short, reverse polarity. Auto re-start | | | | | |
| Hot plug protection features | low output capacitance <9µF, current limiting and software restart features (01,02 models only) | | | | | |
| Input current THD | 8% typical @ full load | | | | | |
| Mains harmonics | IEC/EN61000-3-2 Class C limit, Table 2 | | | | | |
| Touch Current | 0.28mA (spec limit is 0.7mA) @ 240VAC mains EN60990 | | | | | |
| Humidity | 85% max non-condensing | | | | | |
| EMC emissions | Meets EN55015:2013. Conducted (9kHz-30MHz), Radiated (30MHz-300MHz) | | | | | |
| Standby power | 0.5W | | | | | |
| 'Cold' start-up time | 500ms typical | | | | | |
| DALI response time | <50ms (Time to go from standby to on) | | | | | |
| Off load voltage | <58V | | | | | |
| Ambient temperature range | -25°C to 50°C | | | | | |
| Maximum Tc temperature | 80°C | | | | | |
| Dimming range | 100 - 0.1% (See models for minimum current) | | | | | |
| Dimming method | Linear amplitude dimming (No PWM dimming) | | | | | |
| Dimming port classification | FELV (DALI) / LV (Switch + Touch Dim) | | | | | |
| Terminal blocks | 45° Push fit connectors, Input: 7mm pitch, Output/DALI: 3.5mm pitch | | | | | |
| Enclosure | White polycarbonate UL94-V0 rated | | | | | |
| Wire size | 0.5mm ² to 1.5mm ² (20-16 AWG) | | | | | |

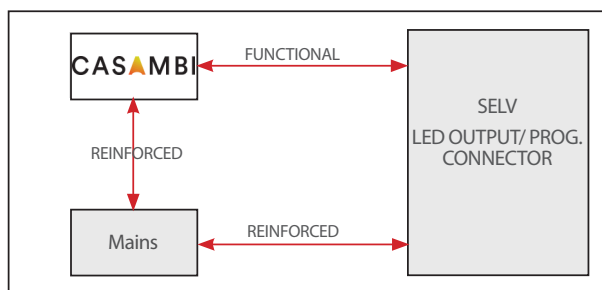
| Case Style | Dimensions | Weight | Box Quantity | IP Rating |
|-------------------|--------------------------|--------|--------------|-----------|
| Integral | 133.3mm x 21mm x Ø39.5mm | 92g | TBC | N/A |
| With cable clamps | 149mm x 21mm x Ø39.5mm | 100g | TBC | IP40 |

Operation

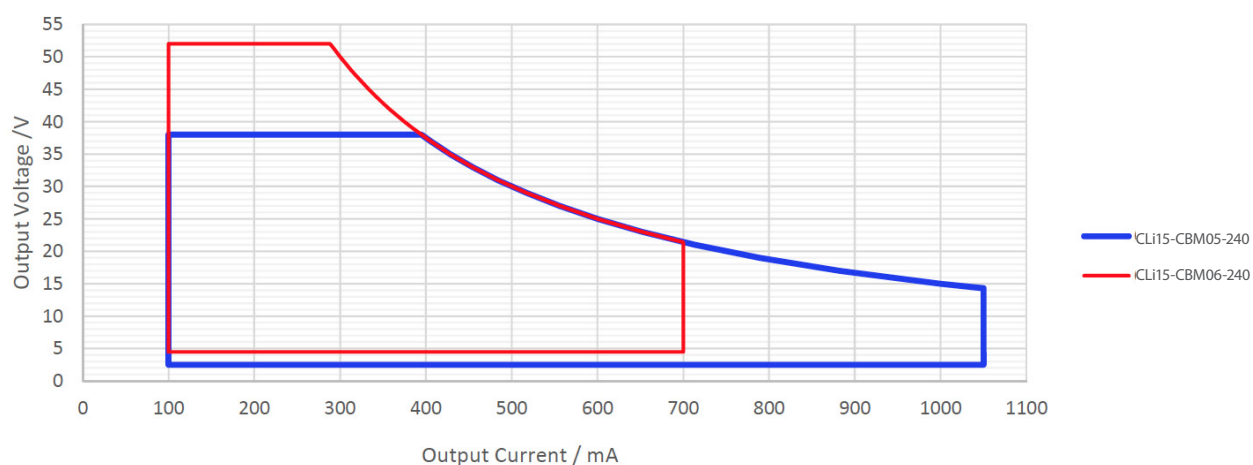
*Drivers are suitable for DC & AC operation at 0/50/60 Hz and compliant to EN50172.

The operation is compliant to EN 60598-2-22 except with the 'high risk task lighting' applications.

Insulation classes for isolated circuits
Casambi model isolation barrier definition

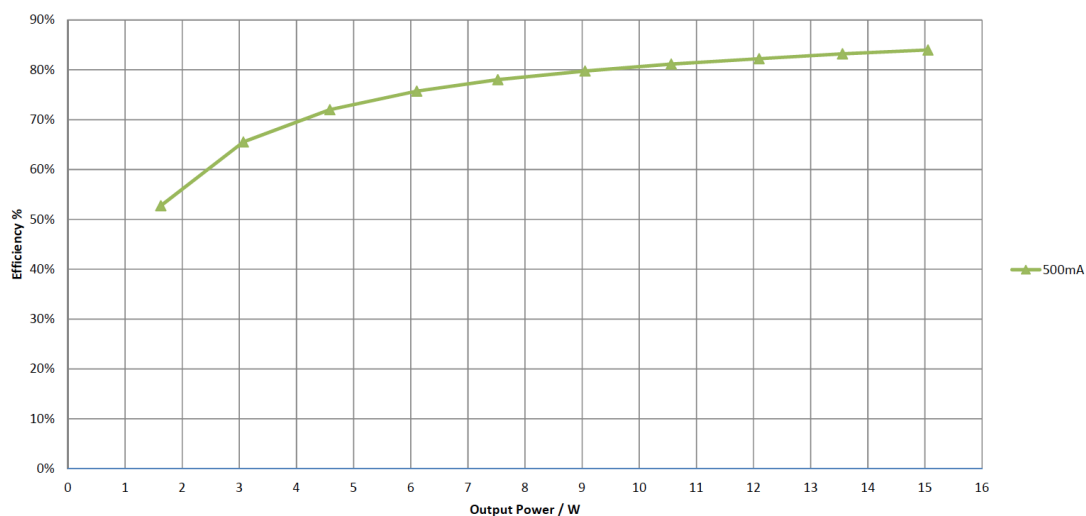


Operating Range (undimmed)

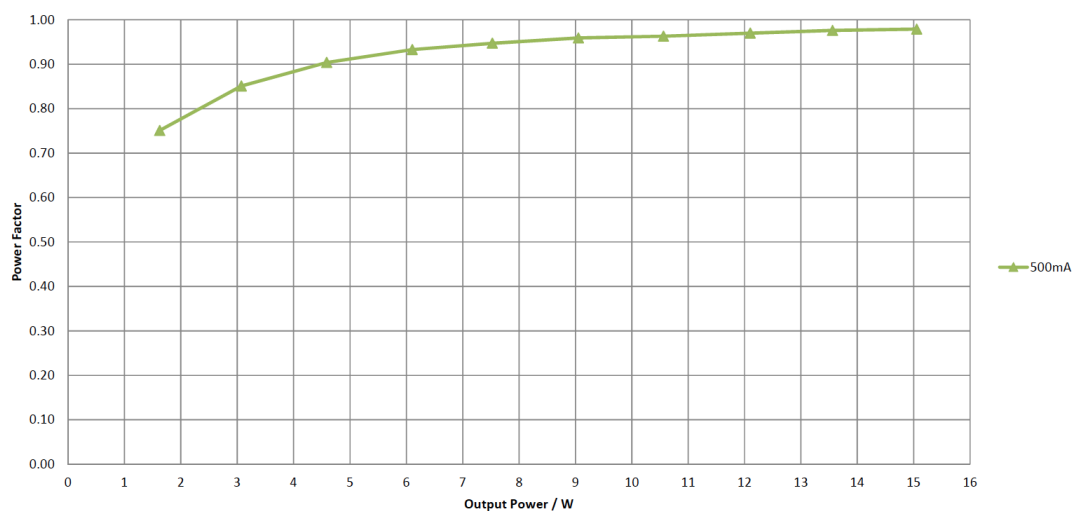


LED constant current is set in software according to application/customer requirement.

Efficiency

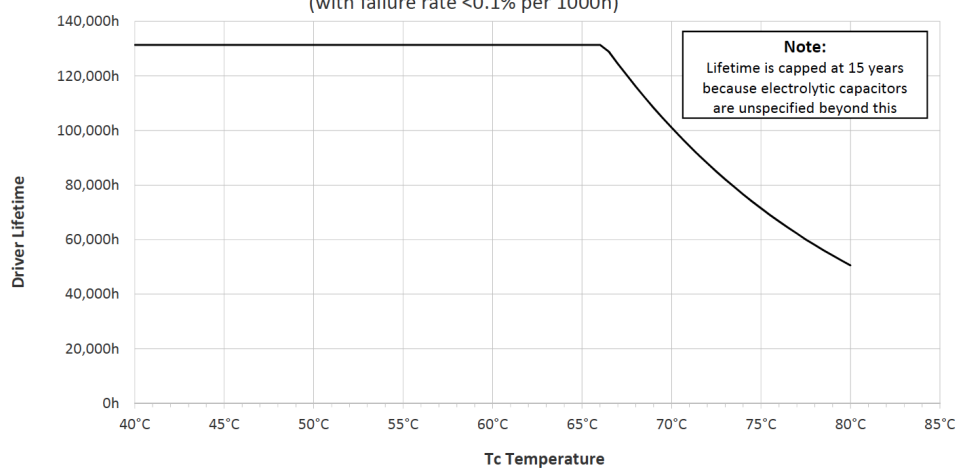


Power Factor



Driver Lifetime with Temperature at Full Load

(with failure rate <0.1% per 1000h)



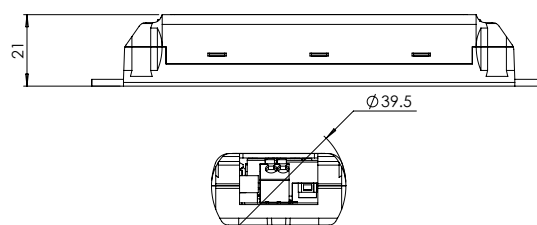
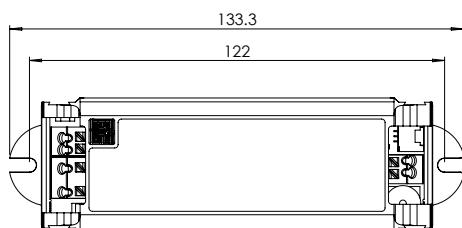
Variants

| Part number | Programmable Current Range | LED String Voltage | Max. Tc Temperature | Ambient Temperature Range | Thermal Trip (Self - resetting) | Maximum Power | Power factor at full load | Efficiency at full load | Minimum Dimmed Current |
|----------------------|----------------------------|--------------------|---------------------|---------------------------|---------------------------------|---------------|---------------------------|-------------------------|------------------------|
| CLi15-CBM05-240/xxxx | 100 - 1050mA (±5%) | 2.5V to 38V | 80°C | -25 - 50°C | 100°C | 15W | 0.97 | 85% | 350µA |
| CLi15-CBM06-240/xxxx | 100 - 700mA (±5%) | 4.5V to 52V | 80°C | -25 - 50°C | 100°C | 15W | 0.97 | 85% | 350µA |

To order, customer replace xxxx with the required LED current in mA
Order Examples: CLi15-CBM05-240/1050, CLi15-CBM06-240/350

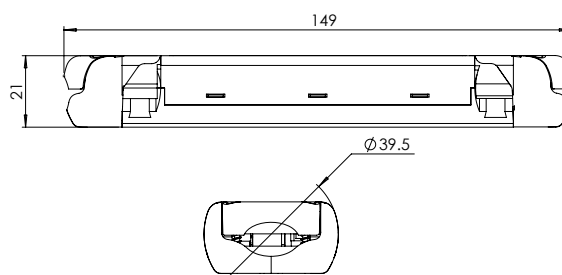
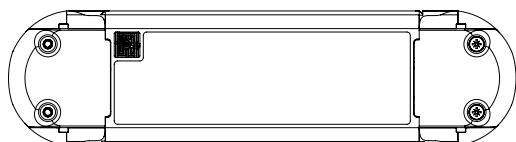
Dimensions

Integral style



Cable clamps (remote) style

For remote mount, cable clamps are required
Order CLi15 clamp kit part number: CLi-CC39-SET



Compliance

Designed to meet the following:

| Approval | Standards |
|--------------------------------|--|
| CE (Europe) | RED 2014/53/EU, RoHS:2011/65/EU, ECOD/2009/125/EC |
| ENEC (Europe) Applied for | EN61347-1:2015, EN61347-2-13+A1:2017+ANNEX J, EN62384+A1:2009 |
| CB (International) Applied for | IEC61347-1:2015, IEC61347-2-13+A1:2016+ANNEX J, IEC62384+A1:2009 |



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