Harvard Power Systems

REV 1.0

CoolLED pro LED DRIVERS

CASAMBI CLi40 (40 watt)

40W (up to 1400mA)

New to Harvard's CLi LED driver range is a Casambi model featuing 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 avaiable
- 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 22mm x 55.5mm x 137mm (175mm 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 89% efficiency
- Power factor corrected (0.98)
- 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

CASAMBI NoFlicker

Harvard Power Systems Limited
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LED SOLUTIONS

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CoolLED PRO

LED DRIVERS

Technical Specification

	40W					
AC input Voltage	220 to 240VAC Nominal					
Input Frequency	0/50/60Hz					
Input Current	0.25A Max					
Input Power	47W Max					
Input Power Factor	0.98					
Input Current THD	8% typical @ full load					
Input Harmonics	IEC/EN61000-3-2 Class C limit, Table 2					
DC Input Voltage	220 - 240V Nominal / 176 -280V Operational range					
Emergency Supply Currents	@220VDC - 224mA (±10%) / @240VDC - 210mA (±10%)					
Driver emergency output factor (EOF_r)	1.00 (Light output on AC or DC supply is identical)					
Inrush Current	25A peak decaying to zero over 30µs (0.1R + 100µH mains impedance)					
Number of Drivers per MCB (maximum typical)	B6	B10	B16	C6	C10	C16
	10	17	27	13	21	35
Input Surge Protection	4kV common-mode 2kV differential-mode					
Input Output Isolation	3kV AC rms					
Dimming Range	100 - 0.1% (350µA Minimum)					
Dimming Method	LED current dimming (No PWM dimming)					
Dimming Control	CASAMBI					
100/120 Hz Ripple	<1%					
Flicker	IEEE1789:2015 compliant with NO RISK category					
Output Protection	Overvoltage, short, reverse polarity. Auto re-start					
Off Load Peak Voltage	<45V/<58V					
"Cold" start time	600ms typical					
Dali Response Time	<50ms (Time to go from standby to on)					
Switch-on output current ramp time	typical 100ms to 100%					
Standby power	<0.5W					
Touch Current	0.28mA (spec limit is 0.7mA) @ 240V mains EN60990					
Dimming Port Classification	FELV (DALI) / LV (Switch + Touch Dim)					
Ambient Temperature	-25°C to 50°C					
Maximum Case Tc Temperature	85°C					
Thermal Control	Light reduction above 90°C (Self-resetting)					
Humidity	85% max non-condensing					
EMC Emissions	Meets EN55015:2013. Conducted (9kHz-30MHz), Radiated (30MHz-300MHz)					
Terminal Blocks	45° Push fit connectors, 3.5mm pitch					
Loop in/out Terminals	Maximum load 2A (8 units in series)					
Earth Terminal	For earth termination or loop in/out (Not required for driver safety or operation)					
Wire Sizes	0.5mm² to 1.5mm²					
Enclosure	White polycarbonate UL94-V0 rated					

Case Style	Dimensions	Weight	Box Quantity	IP Rating
Integral	137mm x 22mm x Ø55.5mm	159g	18	IP20
With cable clamps	175mm x 22mm x Ø55.5mm	190g	18	IP40

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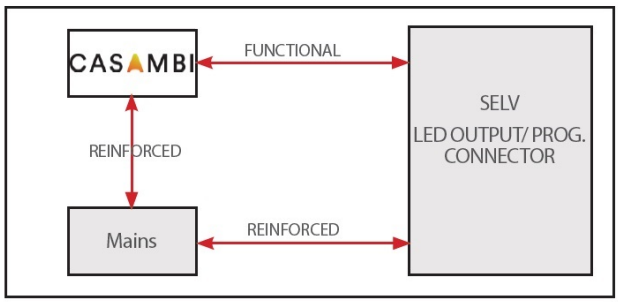
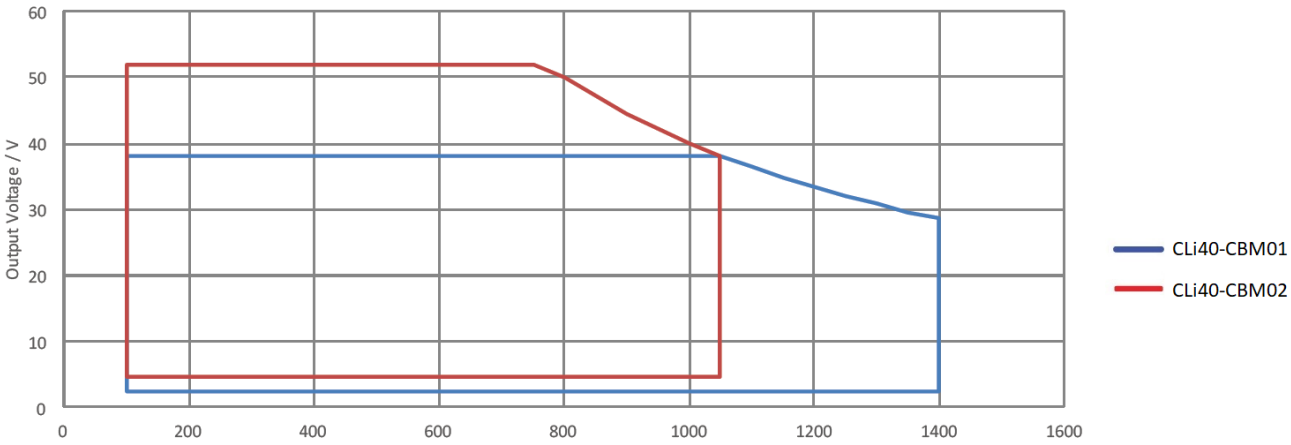
Insulation classes for isolated circuits
Casambi model isolation barrier definition

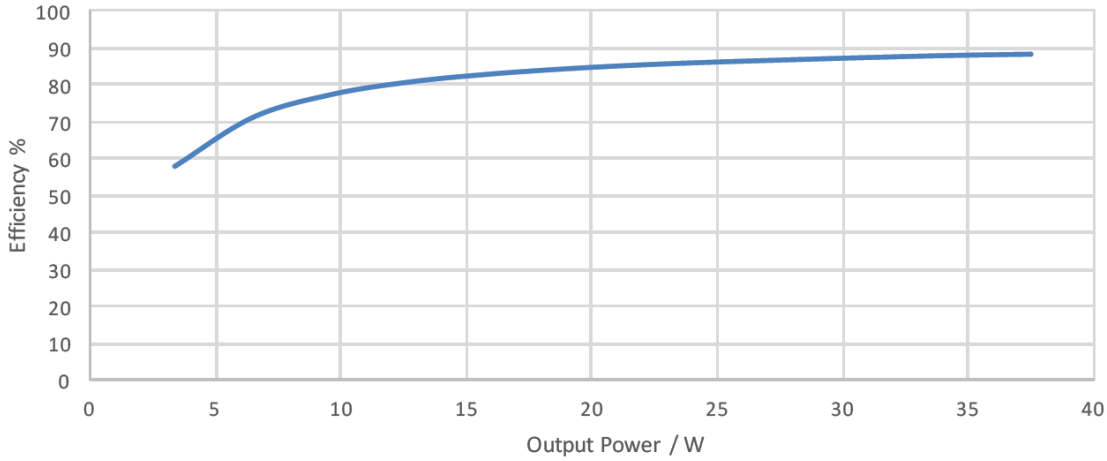


Operating Range (undimmed)



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

Efficiency



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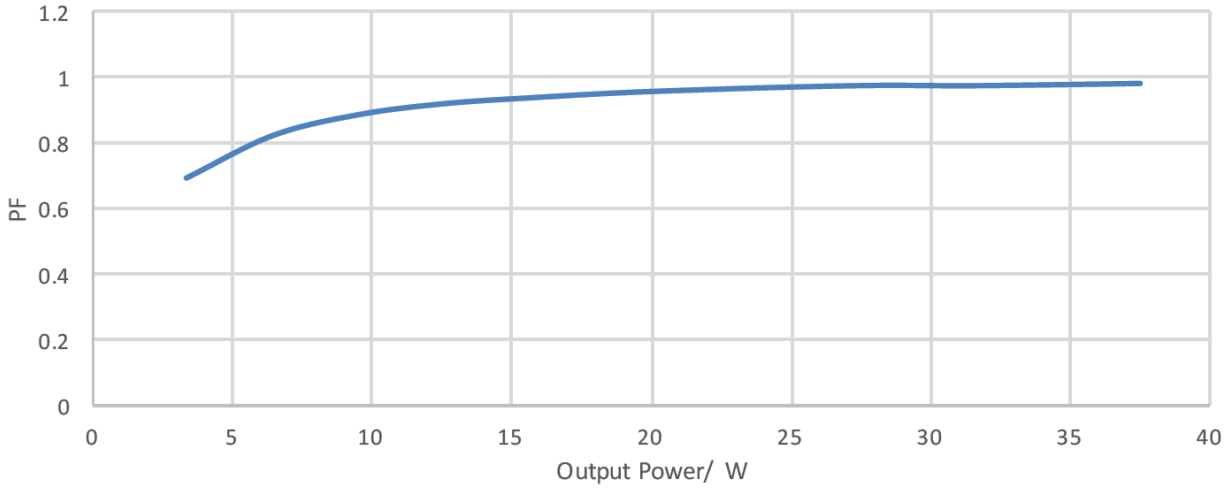
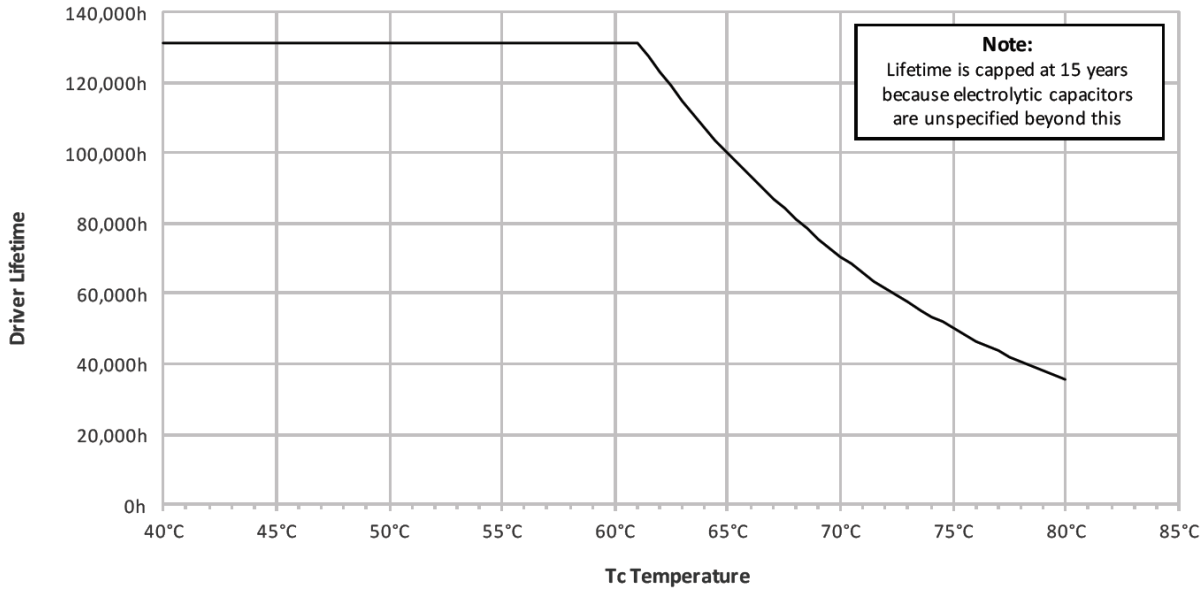
Power Factor



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	Maximum Power	Power factor at full load	Efficiency at full load
CLi40-CBM01-240/xxxx	100 - 1400mA* (±5%)	2.5V to 38V	85°C	-25 - 50°C	40W	0.98	87%
CLi40-CBM02-240/xxxx	100 - 1050mA* (±5%)	4.5V to 52V	85°C	-25 - 50°C	40W	0.98	88%

To order, customer replace xxxx with the required LED current in mA
Order Examples: CLi40-D02-240/350

*Minimum dimmed current is 350µA

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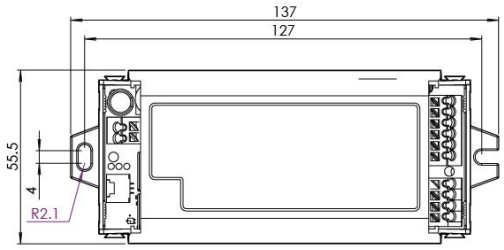
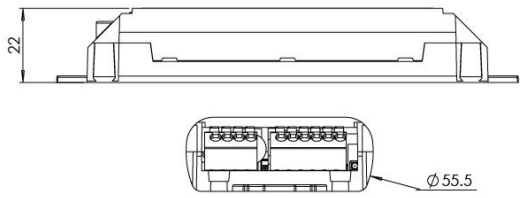
Dimensions

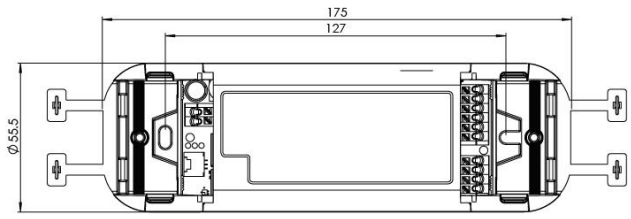
Integral style

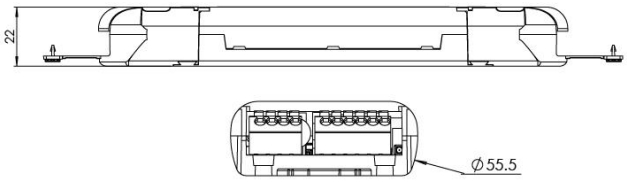




Cable clamps (remote) style

For remote mount, cable clamps are required
Order CLi40 clamp kit part number: CLi-CC55-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

PLEASE NOTE

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