

**CoolLED**  
**CL Switchable**  
**Up to 33W**

# Harvard

## CoolLED

**Efficient  
Innovative  
Control**

### CL Switchable LED Drivers 350/700mA, 500/1000mA & 1200/1400mA

CoolLED drivers provide a high performance solution for powering high-brightness LEDs from a mains supply.

CoolLED Switchable Drivers feature a switch, accessible during installation, to select between two current values.

The power factor corrected, class II driver has fully isolated, SELV output delivering up to 33W of power.

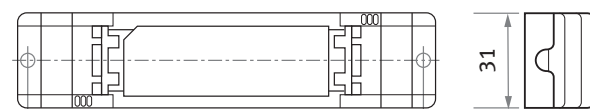
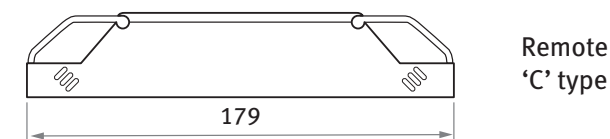
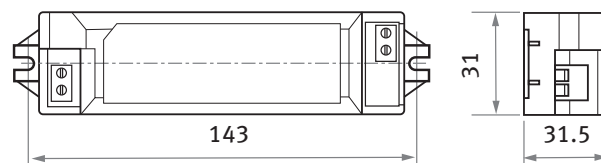
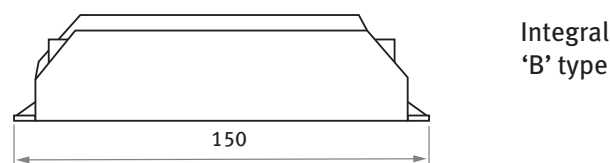
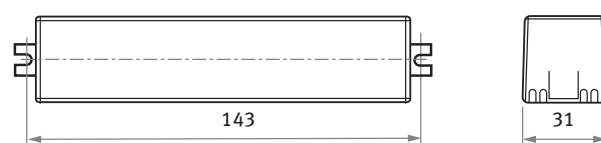
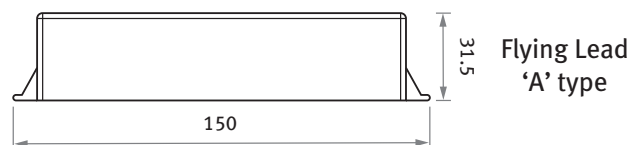
The well regulated output current will typically power a series string of between 3 and 14 LEDs with a 1W to 3W rating up to a combined forward voltage of 48V (1000mA = 33V, 1200mA = 21V, 1400mA = 18V).

CoolLED Switchable Drivers feature a switch, accessible during installation, to select between full and half rated output current.

All CoolLED Drivers have a high efficiency design, which ensures cool operation and long life. The compact enclosure is available in Integral (B) and Remote Mount (C) versions. Remote types feature screwless cable clamps.

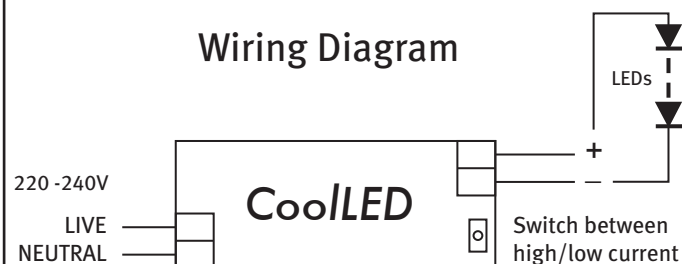
CoolLED Drivers are open and short-circuit protected and have self resetting over temperature trip.

Consult the sales office for versions where the current level can be set by external switch or presence detector. These drivers include a "soft dim" feature to avoid sudden steps in LED brightness.



- Power factor corrected (0.98)
- Constant current output
- Switchable between 350/700mA, 500/1000mA or 1200mA/1400mA
- Self resetting thermal trip
- Double insulated (Class II)
- Screwless cable clamps for fast assembly
- Up to 88% efficient
- Surge protection up to 4kV
- SELV isolation
- Made in the UK
- Integral and remote versions
- Dimmable versions available (consult sales team for details)

### Wiring Diagram



[www.HarvardEng.com](http://www.HarvardEng.com)

Harvard Engineering plc Tyler Close Normanton Wakefield WF6 1RL UK

Tel: +44 (0)113 383 1000 Fax: +44 (0)113 383 1010

**CoolLED**  
**CL Switchable**  
**Up to 33W**

# Harvard

CoolLED

## CoolLED

**Efficient**  
**Innovative**  
**Control**

### Technical Specification

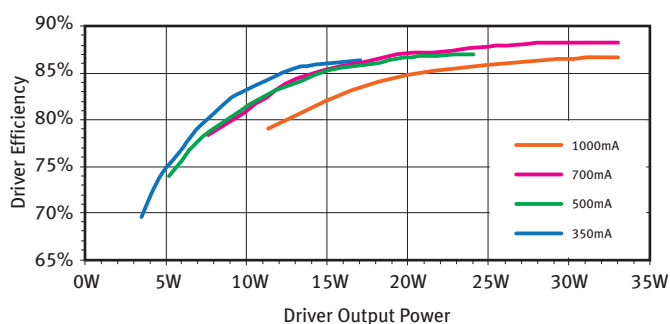
Parameter / Model	CL700S-240-B/C	CL1000S-240-B/C	CL1400S-240-B/C
Mains input voltage range	220 to 240Vrms		
Mains frequency	47 to 63Hz		
Power factor at full load	>0.95 (0.98 typical)		
Efficiency at full load	88% typical		
Mains surge protection	4kV common-mode 2kV differential		
Input-output isolation	3.75kV ac rms		
Ambient temperature range	-25°C to 50°C		
Maximum Tc temperature	80°C		
Humidity	95% max non-condensing		
Thermal trip	110°C self resetting		
Maximum output power	33W	33W	25W
Output current (switchable)	350mA & 700mA	500mA & 1000mA	1200mA & 1400mA
Output current accuracy	± 5%		
LED string voltage	9V to 48V	9V to 48V (33V at 1000mA)	9V to 21V(18V at 1400mA)
Typical no. of LEDs (1-3W)	3 to 14	3 to 10 (8 at 1000mA)	3 to 6 (5 at 1400mA)
Enclosure	White polycarbonate UL94-V0 rated		
Dimensions	See diagrams for A, B and C types		
Terminal blocks	Rising clamp 10mm input 5mm output pitch		
Current ripple on high current setting	10V output = 22% 48V output = 7.5%	10V output = 38% 33V output = 14.5%	18V output = 52%
Wire size	0.5 to 1.5mm <sup>2</sup>		
Weight	120g		
Compliance standards	EN61347-2-13 EN61000-3-2 EN61000-3-3 EN61547 EN55015 EN62384		



**350/700mA, 500/1000mA &  
1200/1400mA**

### Performance Graphs

CoolLED Driver Efficiency Characteristic at 230V Input CoolLED



Driver Power Factor Characteristic at 230V Input



NB. Low power driver available at 350mA & 700mA to improve efficiency for output loading of 10W and below.

[www.HarvardEng.com](http://www.HarvardEng.com)

Harvard Engineering plc Tyler Close Normanton Wakefield WF6 1RL UK

Tel: +44 (0)113 383 1000 Fax: +44 (0)113 383 1010