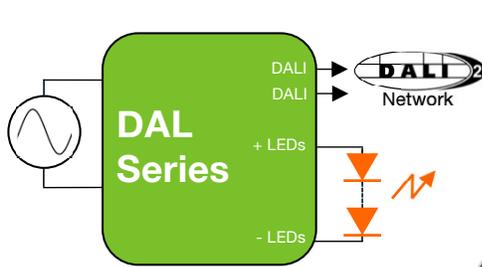


## 50 & 30 W Class 2/Class II CC LED Driver w/ DALI Dimming

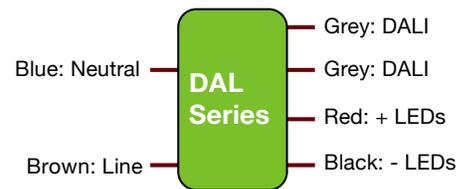
Nominal Input Voltage	Max. Output Power	Efficiency	Max. Case Temperature	THD	Power Factor	Dimming Method	Dimming Range	Startup Time
120 to 277 Vac	50 W	up to 90% typical	90°C (measured at the hot spot)	< 20% (from 100% to 50% of load)	> 0.9 (from 100% to 50% of load)	DALI	1 - 100% (% of lout)	300 ms typical



**Models with Terminal Blocks, Aluminum Case:**  
L 132.2 x W 30.6 x H 20.7 mm  
(L 5.21 x W 1.20 x H 0.81 in)

### FEATURES

- Universal input voltage range
- Ripple < 10% @ 20% & 100% load
- Turn-on: @ 1% lout
- EMI: Compliant with FCC CFR Title 47 Part 15 Class B at 120 Vac & Class A at 277 Vac and with CE EN55015 (CISPR 15) at 220, 230, and 240 Vac
- Safety, Compliance
  - UL: Class 2 output, Class P
  - CB, ENEC
  - FCC, CE
  - DALI2, Device Type 6
- IP20-rated case with silicone-based potting
- Lifetime: 5 years min at 75° C case temperature
- Class II power supply
- 90° C maximum case hot spot temperature



Wiring Diagram



### NFC PROGRAMMING

- Current: 100% to 50% in each voltage range
- Data log read: SKU, S/N, lot code, hours of operation, FW rev., fault events: power failure, transients (short or surge), thermal



## 50 & 30 W Class 2/Class II CC LED Driver w/ DALI Dimming

### 1 - ORDERING INFORMATION

Part Number	Nominal Input Voltage (Vac)	Max Output Power (W)	Iout (mA)	Vout Min. (Vdc)	Vout Nom. (Vdc)	Vout Max. (Vdc)	Open Loop (No Load) Voltage (Vdc)	Comments
<b>DAL30W</b>								
DAL30W-0600-42-T	120 to 277	25.2	300 to 600	28	37.8	42	50	DALI only, Terminal Blocks
<b>DAL50W</b>								
DAL50W-0850-56-T	120 to 277	47.6	425 to 850	38	50.4	56	60	DALI only, Terminal Blocks
DAL50W-1200-42-T	120 to 277	50.4	600 to 1200	28	37.8	42	50	DALI only, Terminal Blocks

## 50 & 30 W Class 2/Class II CC LED Driver w/ DALI Dimming

### 2 - INPUT SPECIFICATION (@25°C ambient temperature)

	Units	Minimum	Typical	Maximum	Notes
<b>Input Voltage Range (Vin)</b>	Vac	90	120, 230, 277	305	•At maximum load, as specified in section 1
<b>Input Frequency Range</b>	Hz	47	50, 60	63	
<b>Input Current (Iin)</b>	A				
<b>Power Factor (PF)</b>		0.9	> 0.9		•At nominal input voltage •From 100% to 50% of rated power
<b>Inrush Current</b>	A	Meets NEMA-410 requirements			•At any point on the sine wave and 25°C
<b>Leakage Current</b>	µA				Measured per IEC60950-1
<b>Input Harmonics</b>	Complies with IEC61000-3-2 for Class C equipment				
<b>Total Harmonics Distortion (THD)</b>				20%	•At nominal input voltage •From 100% to 50% of rated power •Complies with DLC (Design Light Consortium) technical requirements
<b>Efficiency</b>	%	-	up to 90%	-	Measured with nominal input voltage
<b>Isolation</b>	The AC input to the main DC output is isolated and meets Class II reinforced/double insulation power supply 				

### 3 - MAIN OUTPUT SPECIFICATION (@25°C ambient temperature)

	Units	Minimum	Typical	Maximum	Notes
<b>Output Voltage (Vout)</b>	Vdc				See ordering information for details
<b>Output Current (Iout)</b>	A				See ordering information for details
<b>Output Voltage Regulation</b>	%	-5		5	•At nominal AC line voltage •Includes load and voltage set point variations.
<b>Output Voltage Overshoot</b>	%	-	-	10	The driver does not operate outside of the regulation requirements for more than 500 ms during power on with maximum load.
<b>Ripple Current</b>	≤ 10% of rated output voltage for each model				•Measured at maximum load and nominal input voltage. •At 20% & 100% load
<b>Dimming Range (% of Iout)</b>	%	1		100	•Dimming performance is optimal when the driver is operated at its nominal output voltage matching the LED nominal Vf (forward voltage). Dimming performance may vary when the driver is operated near its minimum output voltage.
<b>Start-up Time</b>	ms	450	550		•Measured from application of AC line voltage to DALI command acceptance •With DALI bus present
<b>Isolation</b>	The main DC output is certified and tested per UL8750 Class 2 or LED Class 2				

## 50 & 30 W Class 2/Class II CC LED Driver w/ DALI Dimming

### 4 - ENVIRONMENTAL CONDITIONS

	Units	Minimum	Typical	Maximum	Notes
Operating Ambient Temperature (Ta)	°C	-10		40	
Maximum Case Temperature (Tc)	°C			+90	Case temperature measured at the hot spot •tc
Storage Temperature	°C	-40		+85	
Humidity	%	5	-	95	Non-condensing
Cooling	Convection cooled				
Acoustic Noise	dBA			22	Measured at a distance of 1 foot (30 cm)
Mechanical Shock Protection	per EN60068-2-27				
Vibration Protection	per EN60068-2-6 & EN60068-2-64				
MTBF	> 200,000 hours when operated at nominal input and output conditions, and at Tc ≤ 75°C				
Lifetime	5 years at Tc ≤ 75°C maximum case hot spot temperature				

### 5 - EMC COMPLIANCE AND SAFETY APPROVALS

EMC Compliance	
Conducted and Radiated EMI	Compliant with FCC CFR Title 47 Part 15 Class B at 120 Vac & Class A at 277 Vac and with EN55015 (CISPR 15) at 220, 230, and 240 Vac
Harmonic Current Emissions	IEC61000-3-2 For Class C equipment
Voltage Fluctuations & Flicker	IEC61000-3-3
Immunity Compliance	ESD (Electrostatic Discharge) IEC61000-4-2 6 kV contact discharge, 8 kV air discharge, level 3
	RF Electromagnetic Field Susceptibility IEC61000-4-3 3 V/m, 80 - 1000 MHz, 80% modulated at a distance of 3 meters
	Electrical Fast Transient IEC61000-4-4 ± 2 kV on AC power port for 1 minute, ±1 kV on signal/control lines
	Surge IEC61000-4-5 ± 2 kV line to line (differential mode) / ± 2 kV line to common mode ground (tested to secondary ground) on AC power port, ±0.5 kV for outdoor cables
	ANSI/IEEE c62.41.1-2002 & c62.41.2-2002 category A, 2.5 kV ring wave
Conducted RF Disturbances IEC61000-4-6 3V, 0.15-80 MHz, 80% modulated	
Voltage Dips IEC61000-4-11 >95% dip, 0.5 period; 30% dip, 25 periods; 95% reduction, 250 periods	
Safety Agency Approvals	
UL	UL8750 listed, Class 2, Class P
cUL	CAN/CSA C22.2 No. 250.13-14 LED equipment for lighting applications
CE	IEC61347-2-13 electronic control gear for LED Modules & EN55015 (EMC compliance)
CB	
ENEC	

Safety					
	Units	Minimum	Typical	Maximum	Notes
Hi Pot (High Potential) or Dielectric voltage-withstand	Vdc	4400			<ul style="list-style-type: none"> <li>•Meets Class II reinforced/double insulation </li> <li>•Tested at the RMS voltage equivalent of 3100 Vac</li> </ul>

## 50 & 30 W Class 2/Class II CC LED Driver w/ DALI Dimming

■ 6 – DALI (@25° C ambient temperature)

	Units	Minimum	Typical	Maximum	Notes
<b>Dimming Range</b>	%	1		100	As a percent of the output current
<b>Current Supplied by the DALI+ Signal Pin</b>	mA			60	
<b>Isolation</b>	The DALI circuit is isolated from both the AC input and the main DC output and meets Class II reinforced/double insulation power supply.				

## 50 & 30 W Class 2/Class II CC LED Driver w/ DALI Dimming

### 7- MECHANICAL DETAILS

- **Packaging:** Aluminum case
- **Ingress Protection:** IP20 rated
- **Mounting Instructions:** The DAL series driver case must be secured on a flat surface through the two mounting tabs, shown here below in the case outline drawings.

### 8 - OUTLINE DRAWINGS

**Dimensions:** L 132.2 \* W 30.6 \* H 20.7 mm (L 5.21 \* W 1.20 \* H 0.81 in.)

**Volume:** 83.6 cm<sup>3</sup> (5.06 in<sup>3</sup>)

**Weight:**

**INPUT**  
PCB TERMINAL BLOCK, PUSH-IN CAGE CLAMP  
2-POLES, 3.5MM PITCH  
(MFG: WAGO 60368425, OR EQUIV)  
USE WITH 16-24 AWG, STRANDED/SOLID WIRE  
STRIP LENGTH:8.5~9.5MM  
CONDUCTOR ENTRY ANGLE TO THE PCB: 45°

N: BLUE  
L : BROWN

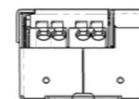
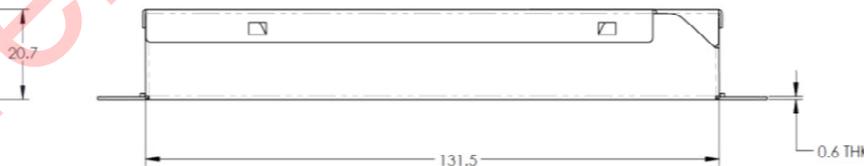
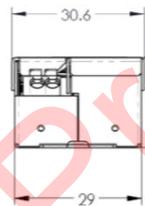


**DALI DIMMING**  
PCB TERMINAL BLOCK, PUSH-IN CAGE CLAMP  
2-POLES, 3.5MM PITCH  
(MFG: WAGO 250-202, OR EQUIV)  
USE WITH 16-24 AWG, STRANDED/SOLID WIRE  
STRIP LENGTH:8.5~9.5MM  
CONDUCTOR ENTRY ANGLE TO THE PCB: 45°

DAL + : GREY  
DAL - : GREY

**OUTPUT**  
PCB TERMINAL BLOCK, PUSH-IN CAGE CLAMP  
2-POLES, 3.5MM PITCH  
(MFG: WAGO 51312370, OR EQUIV)  
USE WITH 16-24 AWG, STRANDED/SOLID WIRE  
STRIP LENGTH:8.5~9.5MM  
CONDUCTOR ENTRY ANGLE TO THE PCB: 45°

LED + : RED  
LED - : BLACK





# DAL Series

**DAL30 30 W**  
**DAL50 50 W**

## 50 & 30 W Class 2/Class II CC LED Driver w/ DALI Dimming

### 9 - LABELING

The XX is used in figure 2 as an example to illustrate a typical label.

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