

LED Driver

DALI Performance Series



40W Constant Current LED Driver With DALI Dimming Interface Data Sheet

For the latest revision, please visit <https://power.liteon.com>

Description

This is a versatile DALI window LED Driver which can output 40 watts of continuous power and with flexibility in designing luminaires used in DALI networks. These drivers offer the needed performance for the application with the precise tuning of drive currents and selectable dimming curves. It complies with worldwide safety and EMC regulations (refer to details below) for various LED applications.

Features

- * High Power Factor
- * Low Total Harmonic Distortion
- * Up to 88 % Efficiency
- * Slim Type Design
- * Up to 100,000 Hrs Lifetime
- * DALI 2.0 Certificated
- * Full Protections: Short-circuit / Over-voltage / Over temperature
- * Standby Power < 0.5 W
- * IEC 61347-1 / IEC 61347-2-13 Certificated
- * Suitable For Emergency Lighting (EL)



Electrical Specification

Model Name	RE-1400-99CK
Output	
Rated power (note #2)	40 W
Rated voltage	24 - 48 V
Rated current (note #3)	0.5 - 1.1 A
Ripple current (note #4)	±5 %
Start-up time (Typ.)	700 mS
Input Specification	
Rated voltage range	200 - 240 Vac
Input voltage AC	180 - 264 Vac
Input voltage DC	180 - 264 Vdc
Max. Input Current	0.31 A
DC Input Current (Typ.)	0.22 A
Min. Power factor (note #5)	0.9

Max. Total Harmonic Distortion (note #5)	20 %
Emergency Output Factor EOFi	0.9
Inrush current (note #6)	25 A / 195 μ S
Frequency range	0 / 50 / 60 Hz
Leakage current (max.)	0.7 mA
Efficiency (min.) (note #7)	87 %
Standby power	< 0.5 W
MCB	
Max. Driver no. on circuit breaker 10 A	17
Max. Driver no. on circuit breaker 16 A	27
Max. Driver no. on circuit breaker 20 A	34
Protection Function	
Over voltage (max.)	< 60 Vdc, auto recovery
Short circuit	Auto recovery
Over temperature	Output current decrease then shut down
Others	
Lifetime (note #8)	100,000 Hrs
Acoustic Noise	Under 25 dB, 30 CM, full load
Dimming Function	
Dimmable	Yes
Dimming range	1 - 100 %
Dimming interface	DALI-2 、 Push Dim
Suitable for emergency lighting	Yes
Environment	
Tc-max	90 °C
Temperature	(operating) -25~60 °C / (storage) -25~85 °C
Humidity	(operating) 10~90 % RH non-condensing / (storage) 5~95 % RH
Mechanical	
Dimension	123.5(L) * 74(W) * 25.5mm(H)
Vibration (with shipping container)	1.146 Grms / 5~200 Hz / six sides (30 minutes for each side)
Vibration (operation)	2 Grms / 10~500 Hz / X, Y, Z axis (15 minutes for each axis)
Weight (Typ.)	200 g
Cable cross-section, input side	0.5 - 0.75 mm ²
Cable cross-section, output side	0.5 - 0.75 mm ²
Wire preparation length, input side	8.5 - 9.5 mm
Wire preparation length, output side	8.5 - 9.5 mm
Clamping box Screw Torque	8.0 \pm 0.5 kgf-cm

Safety				
Standard	IEC 61347-1:2015 / IEC 61347-2-13:2014 +A1 :2016 / CE / ENEC / IEC62386-101, 102, 207 / RCM			
Hi-pot	Input-Output: 3750 Vac / Input-DALI: 1500 Vac			
Isolation	Insulation	AC Input Port	SELV Output Port	DALI Port
	AC Input Port		Reinforced	Basic
	SELV Output Port	Reinforced		
	DALI Port	Basic	Supplementary	
Protection Class	Class II			
EMC				
EN55015	Conducted: class B / Radiated: class B			
EN61000-3-2	Harmonic distortion: class C			
EN61000-3-3	Voltage Fluctuations & Flicker			
EN61000-4-2	ESD: ±4 kV contact discharge / ±8 kV air discharge, class B			
EN61000-4-3	Radiated RF immunity: 3V/m			
EN61000-4-4	EFT: ±1 kV (AC input power)			
EN61000-4-5	Surge: ±1 kV DM / ±2 kV CM, class B			
EN61000-4-6	Conducted RF immunity: 3 V			
EN61000-4-11	Voltage dip immunity			

Notes

#1: All specifications are defined at 230 Vac / 50 Hz rated power, and 25 °C ambient temperature if not mentioned specifically.

#2: Partial load 12 ... 39.6 W

#3: Output Current Regulation $\pm 5\%$

#4: Ripple current is defined under 120 Hz (peak / average).

#5: At 50 % ~ 100 % load.

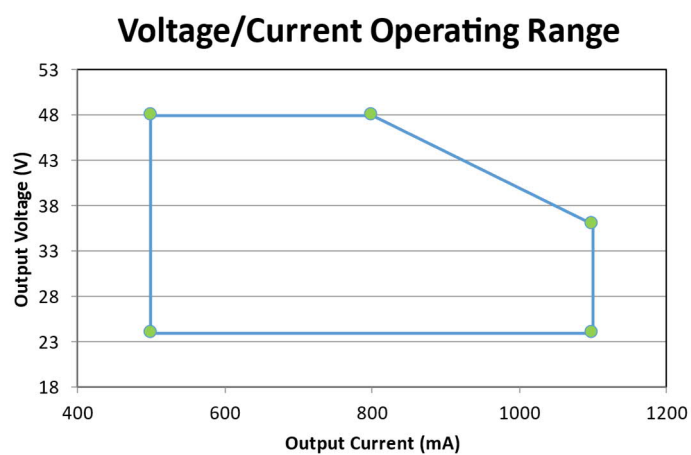
#6: 230 Vac / 50 Hz & max. output wattage. (cold start)

#7: Efficiency test condition at 700 mA / 48 V output.

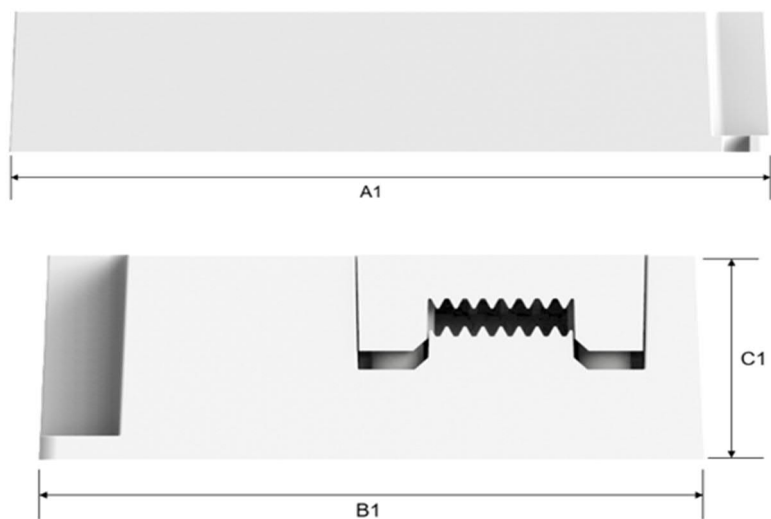
#8: At 700 mA / 48 V output, 65 °C Tc.

#9: Push dim function is designed for manual control, it is not suitable for a connection to an automation.

Operating Window



Mechanical Specification

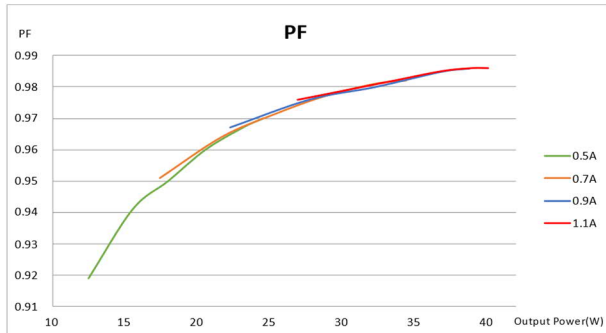


Item	Value	Unit
Length (A1)	123.5±1	mm
Width (B1)	74±1	mm
Height (C1)	25.5±1	mm

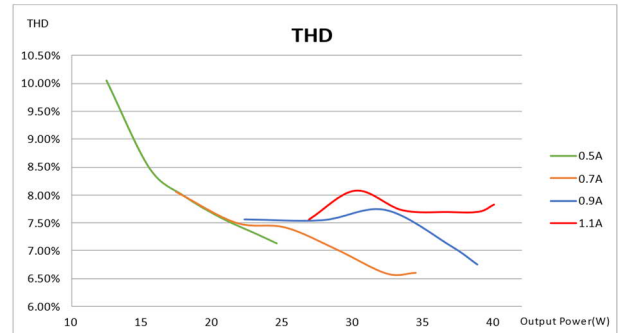
Performance Characteristics

All specifications are defined at 230 Vac / 50 Hz rated power, and 25°C ambient temperature with 30 minutes burn-in.

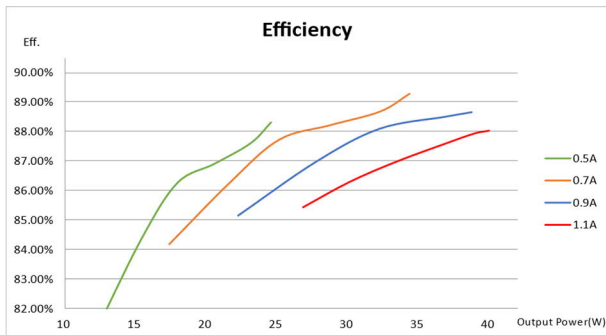
Power Factor Vs. Output Power



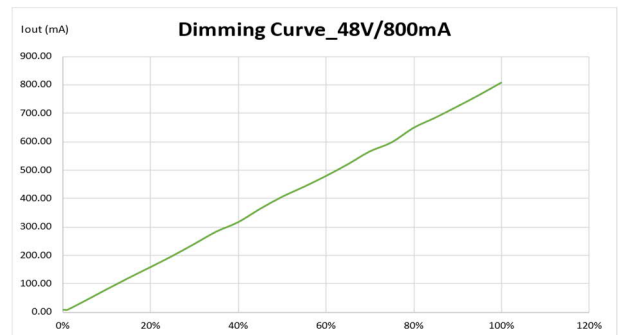
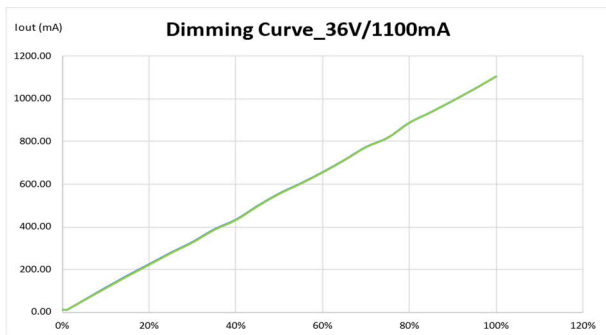
Total Harmonic Distortion Vs. Output Power



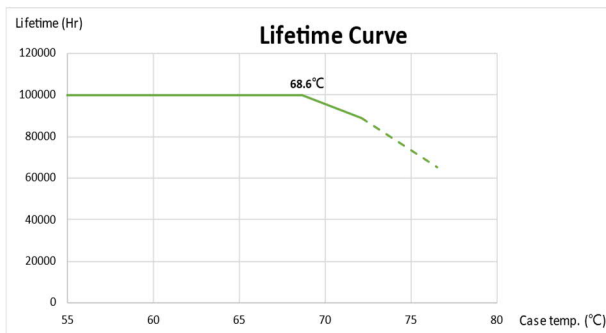
Efficiency Vs. Output Power



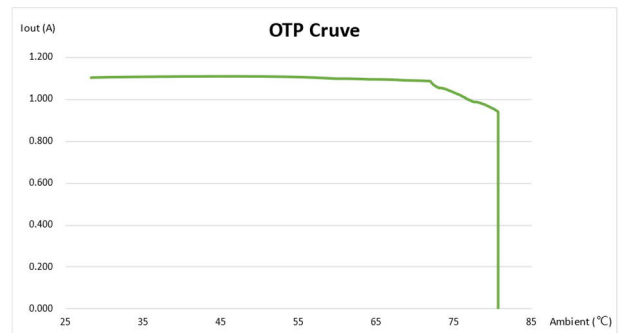
Output Current Vs. Dimming Percentage



Lifetime Vs. Driver Case Temperature



Output Current Vs. Ambient Temperature



Notes

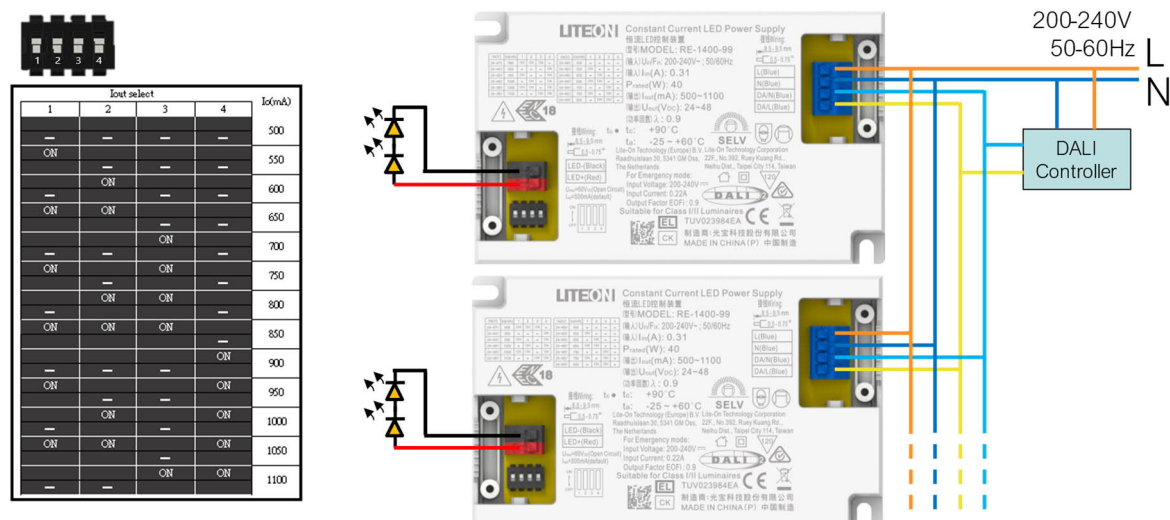
#10: Programmable temperature & humidity chamber: Chroma THS-B4T-150 / E-Load: Prodigit 3340F、3341F.

Push Dim Information

Action	Action duration	Push-button	LED Status
Initialization	Time > 1 s	Press and hold the Push-button still the brightness decreases	Initialization
LED turn off	Time < 0.5 s	Click the push-button one time	Off
LED turn on	Time > 0.5 s	Press the push-button one time	On
Dimming	Time 1 s ... 5 s	Dimming brightness up or down, the initial dimming direction is defined from 100% to 1%. Every long push changes the dimming direction	Dimming up or down
Reset	Time > 10 s	Long press and hold push-button, reset control gear output current as default value (100%). Or remove AC input voltage from AC input port and then plug in again.	Reset brightness to the default value (100%)

Installation

DALI Installation: Max. 64 LED drivers can be connected.



Push Dim Installation: Max. 15 LED drivers can be connected.

