



## Product Specification

<b>Title</b>	<b>DALI Dimmable LED Driver</b>
<b>Model</b>	<b>BQ-020DNPV (Constant Voltage / Flicker Free)</b>
<b>Specification</b>	<b>Input: 100~240Vac 50/60Hz</b> <b>Output: 12V/1670mA 24V/840mA</b>
<b>Power Range</b>	<b>20W</b>
<b>Author</b>	<b>R&amp;D</b>
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<b>Revision</b>	<b>2.0</b>

## 1. Product Description

1.1 This engineering report describes the design for a **DALI dimmable Constant Voltage LED Driver** for LED applications.

### 1.2 Prototype Photo



### 1.3 Physical size

	L (mm)	W (mm)	H (mm)
	155	53	30
	±1	±1	±1

## Features

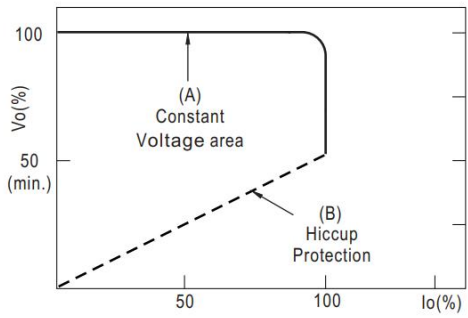
- 100~240Vac 50/60Hz
- Built-in active PFC function
- Flicker Free
- Short circuit,Over current,Over voltage Protection
- Air Cooling
- Integrated Dali standard interface
- Applied to LED lighting etc
- No load and Safety Protection Device
- Installed economically and quickly
- Complied with the world safety standard of lighting
- Protection class II
- 5 years Warranty

## Description

BQ-020DNPV DALI dimmable LED Driver is a kind of Constant Voltage LED power supply that our company R&D, with high power factor, high efficiency, high precision, adopting the high efficiency, stable, low loss of switch control chip. It was made with high-quality components, so it had the characteristics like low noise, energy-saving, environmental protection, and long life, etc.

## 1.4 Working principle

BQ-020DNPV DALI Dimmable LED Driver is with the Constant Voltage feature, the working condition is as the picture under.



Typical output current normalized by rated current (%)

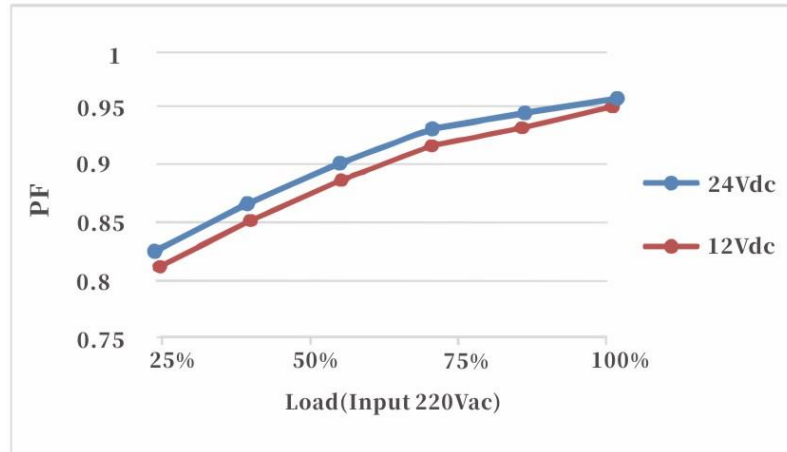
## 2. Electric Idiosyncrasy

### 2.1 Specs.

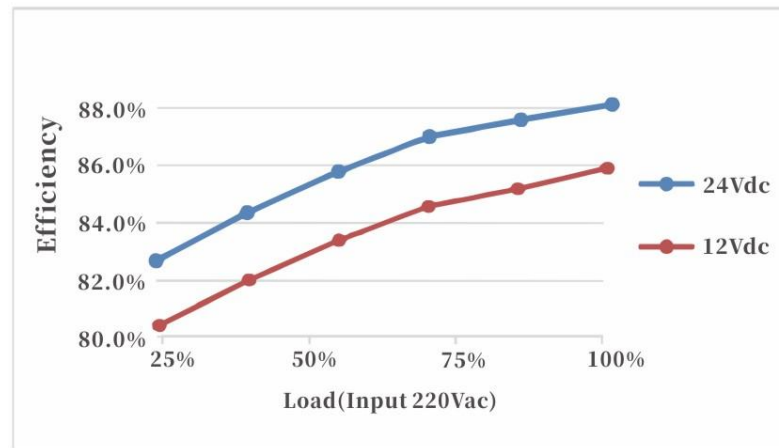
Model		BQ-020DNPV	
<b>Output</b>	DC Voltage	12V	24V
	Output Current	1670mA	840mA
	Output Power	20W	
	Flicker Index	Modulation depth $\leq 1\%$ Complies with the flicker-free standard (IEEE Std 1789-2015)	
	Ripple Voltage	<10%	
	Voltage Tolerance	$\pm 0.5V$	
	Temperature Drift	$\pm 5\%$	
	Start-up Time	<1.5S@230Vac	
<b>Input</b>	Input Voltage	100-240VAC	
	Frequency Range	47-63Hz	
	Power Factor(Typ.)@ full load	0.94@115VAC 0.92@230VAC	
	THD(Typ.)@ full load	<20%	
	Efficiency(Typ.)@ full load	86%	88%
	AC Current(Max.)	0.3A@230VAC	
	Inrush Current (Typ.)	20A, 50%, 1.6ms	
	Leakage current	<0.5mA	
<b>Protection</b>	Short Circuit	shut down o/p voltage, re-power on to recover after fault condition is removed	
	Over temperature	100°C $\pm$ 10°C shut down o/p voltage, automatically recover after cooling.	
<b>Environment</b>	Working TEMP.	-40~+60°C	
	Working Humidity	20~90%RH, non-condensing	
	Storage TEMP. Humidity	-40~+80°C, 10~95%RH	
	Atmospheric Pressure	86kPa~106kPa	
<b>Safety&amp; EMC</b>	Safety standards	EN61347	
	Withstand voltage	I/P-O/P: 3.75KVac	
	Insulation Resistance	I/P-O/P:100M $\Omega$ /500VDC/25°C/70%RH	
	EMC EMISSION	EN55015; EN61000-3-2; EN61000-3-3;	
	EMC IMMUNITY	EN61547	
<b>Others</b>	DALI Standard	IEC 62386-101 102 207: DALI 2.0	
	Dimension	155*53*30 mm (L*W*H)	
	Warranty	5 Years	

## 2.2 Characteristic Curve

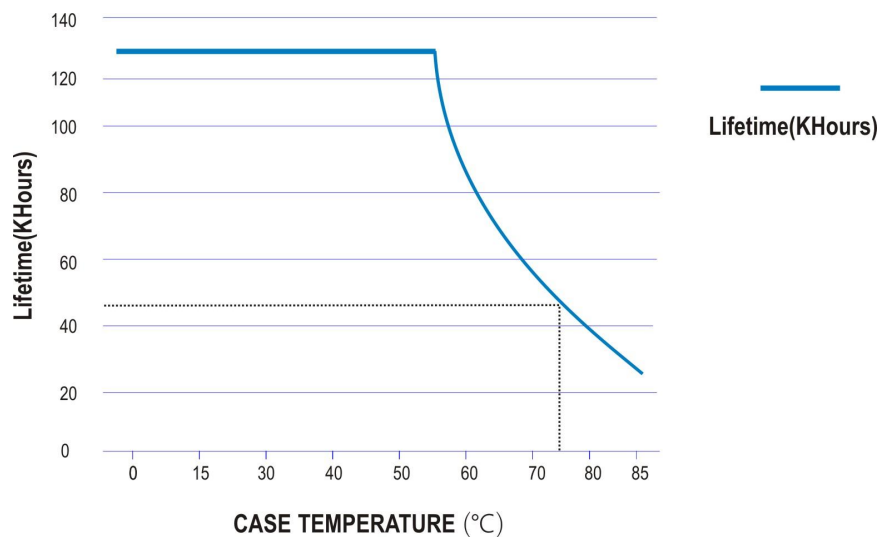
### 2.2.1 Power Factor Characteristic Curve



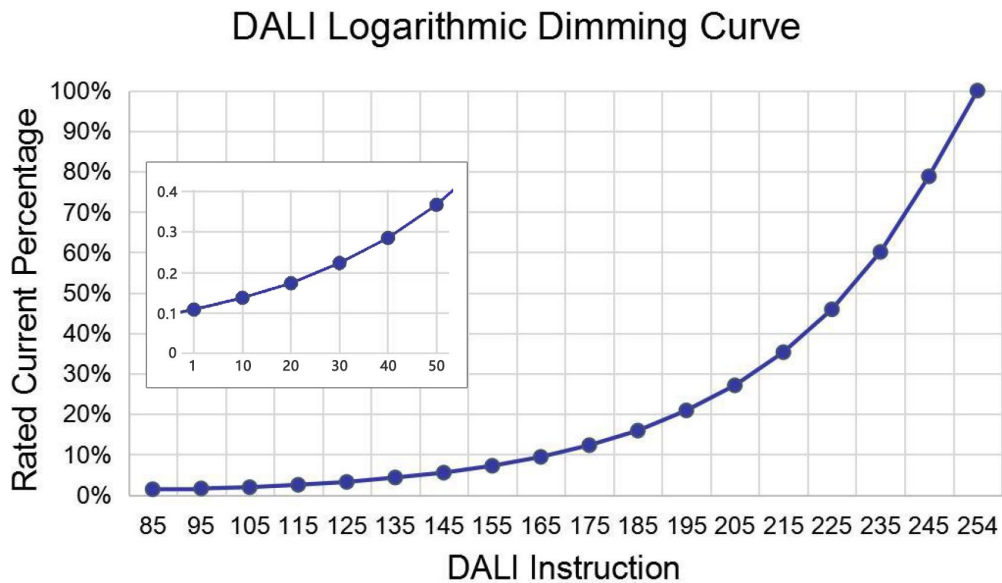
### 2.2.2 Power Efficiency Characteristic Curve



### 2.2.3 Lifetime Characteristic Curve



## 2.2.4 Dimming Curve



### Operation Instructions of DALI Dimming

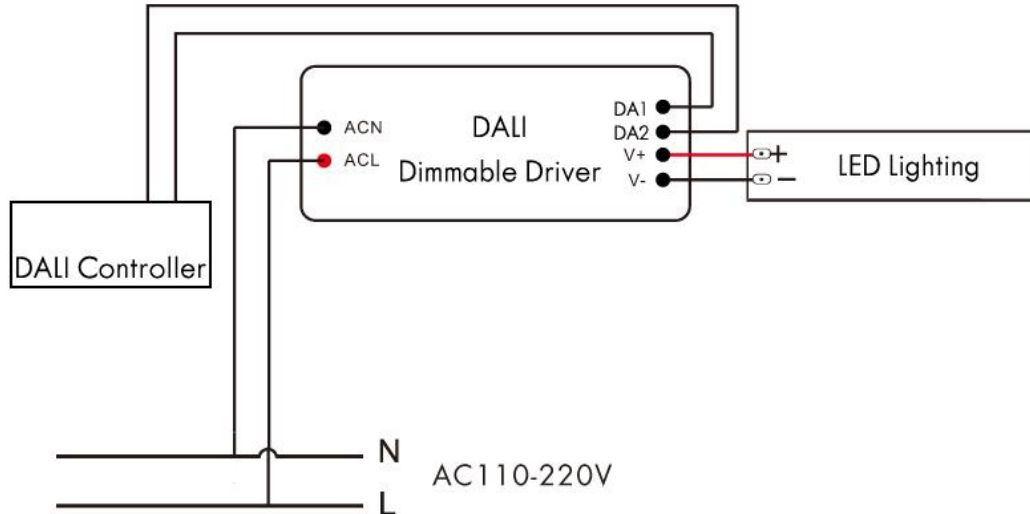
Factory default setting is of 100% brightness.

Connect the DALI signal to the DA1 and DA2 terminals.

DALI protocol includes 16 groups and 64 IP addresses.

The minimum dimming depth of the DALI dimming is 0.1% (Iout).

## 2.3 Circuit Drawing



1. When using this product, Please differentiate its input and output terminal. PRI is AC input, Connect ACL to firing line, ACN to null line; DC output, LED + and LED - connect the positive and negative of LED lamps separately; DA1 and DA2 DALI signal lines, no need to differentiate the positive and negative.

2. This product is a high Voltage LED lamps controller, please cut off the power before installation, Wiring according to the chart as shown, Connect LED+ and LED- , then connect the DA1 and DA2 signal wire, at last connect ACL and ACN. After verification to electricity.

### 3. Real Photo

