

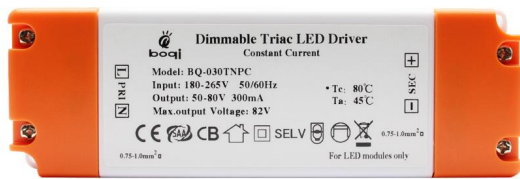
## Product Specification

<b>Title</b>	<b>TRIAC &amp; Phase Cut Dimmable LED Driver</b>
<b>Model</b>	<b>BQ-030TNPC (Flicker Free)</b>
<b>Specification</b>	<b>Input: 220~240Vac 50/60Hz Output: 50-72V/300mA 24-42V/600mA</b>
<b>Power Range</b>	<b>15-24W</b>
<b>Author</b>	<b>R&amp;D</b>
<b>Document NO.</b>	<b>RDPS-2105</b>
<b>Date</b>	<b>2021-01-03</b>
<b>Revision</b>	<b>2.0</b>

## 1. Product Describes

1.1 This engineering report describes the design for a **TRIAC & Phase Cut dimmable Constant Current led driver** for LED applications.

### 1.2 Prototype Photo

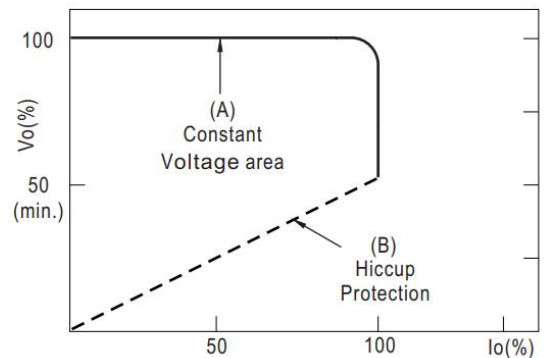


### 1.3 Physical size

L (mm)	W (mm)	H (mm)
130	43	21
±1	±1	±1

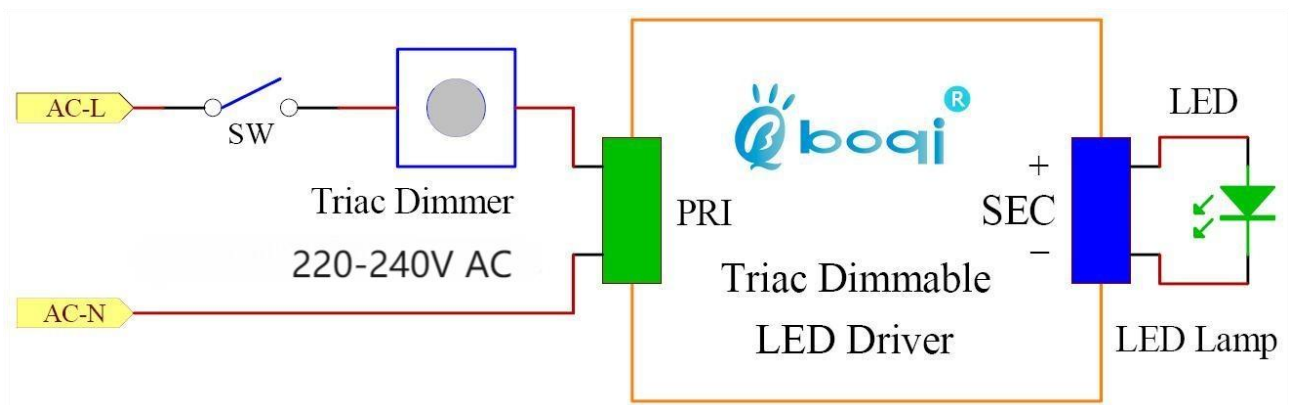
### 1.4 Working principle

BQ-030TNPC TRIAC Dimmable LED Driver is with the Constant Current feature, the working condition is as the picture under.



Typical output current normalized by rated current (%)

### 1.5 Circuit Drawing



## 2. Electric Idiosyncrasy

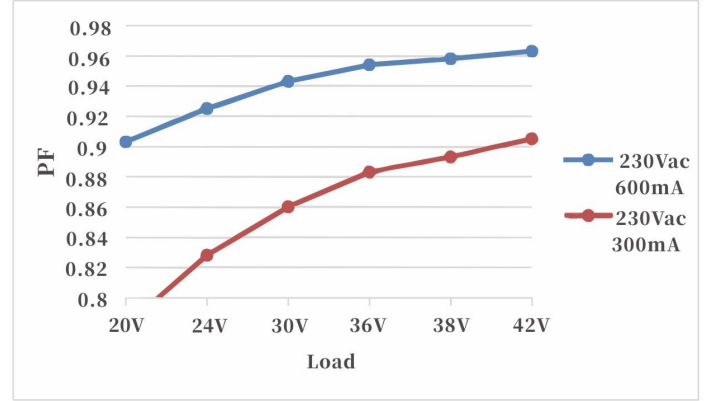
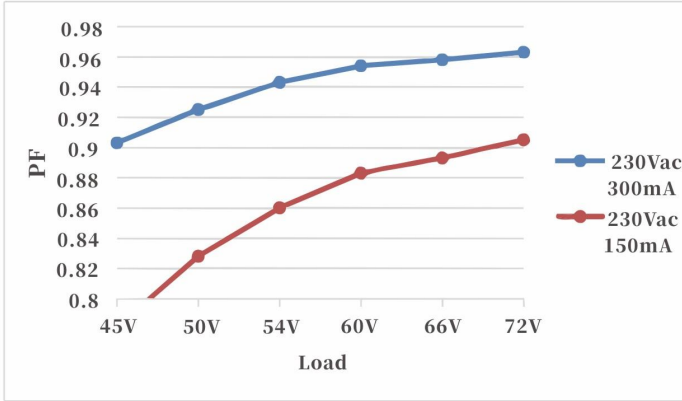


### 2.1 Specs.

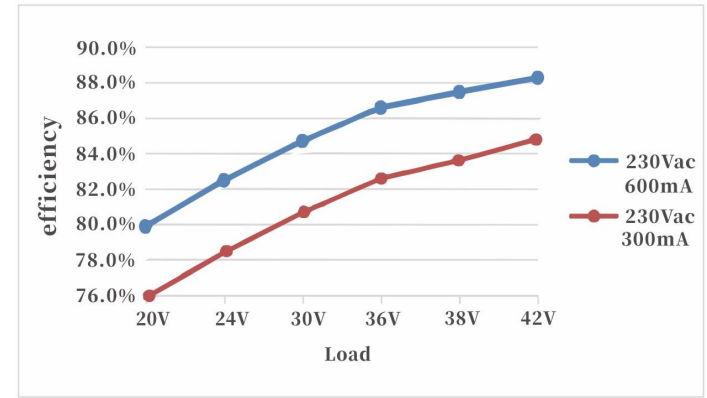
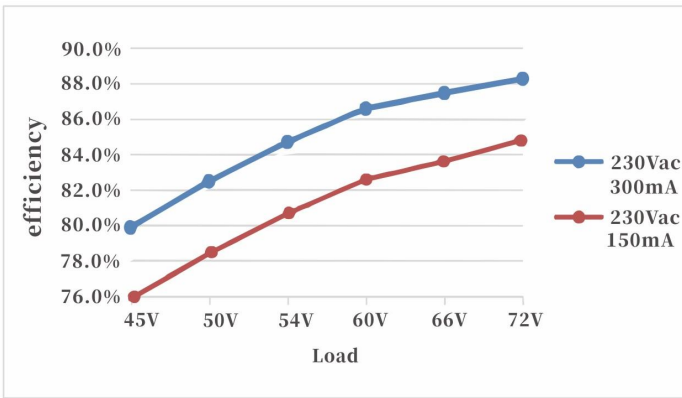
Model		BQ-030TNPC	
<b>Output</b>	DC Voltage	36-60V	24-42V
	Output Current	400mA	600mA
	Output Power	15-24W	
	Flicker Index	Modulation depth $\leq 1\%$ Complies with the flicker-free standard (IEEE Std 1789-2015)	
	Current Tolerance	$\pm 5\%$	$\pm 5\%$
	Temperature Drift	$\pm 5\%$	
	Start-up Time	$< 1.5S @ 230Vac$	
<b>Input</b>	Input Voltage	220-240VAC	
	Frequency Range	47-63Hz	
	Power Factor(Typ.)@ full load	0.95@115VAC 0.93@230VAC	
	THD(Typ.)@ full load	$< 20\% @ 230Vac$ (DC42V full load)	
	Efficiency(Typ.)	88%@ full load	88%@ full load
	AC Current(Max.)	0.3A	
	Leakage current	$< 0.5mA$	
	Standby Power Consumption	$\leq 0.5W$ (when DALI OFF signal is effective)	
<b>Protection</b>	Short Circuit	Hiccup mode (auto-recovery)	
	Over temperature	$100^{\circ}C \pm 10^{\circ}C$ shut down o/p voltage, automatically recover after cooling.	
<b>Environment</b>	Working TEMP.	$-20^{\circ}C - +45^{\circ}C$	
	Working Humidity	20~90%RH, non-condensing	
	Storage TEMP.Humidity	$-30 \sim +80^{\circ}C$ , 10~90%RH	
	Atmospheric Pressure	86kPa~106kPa	
<b>Safety&amp; EMC</b>	Certifications	TUV-CE, CB, SAA, RoHS	
	Safety standards	EN61347	
	Withstand voltage	I/P-O/P: 3.75KVac 5mA 60S	
	Insulation Resistance	I/P-O/P: 100MQ/500VDC/25 $^{\circ}$ C/70%RH	
	EMC EMISSION	EN55015; EN61000-3-2; EN61000-3-3;	
	EMC IMMUNITY	EN61547	
<b>Others</b>	Dimming Function	Compatible with Leading and Trailing Edge Dimmer	
	Dimension	130*43*21 mm (L*W*H)	

## 2.2 Characteristic Curve

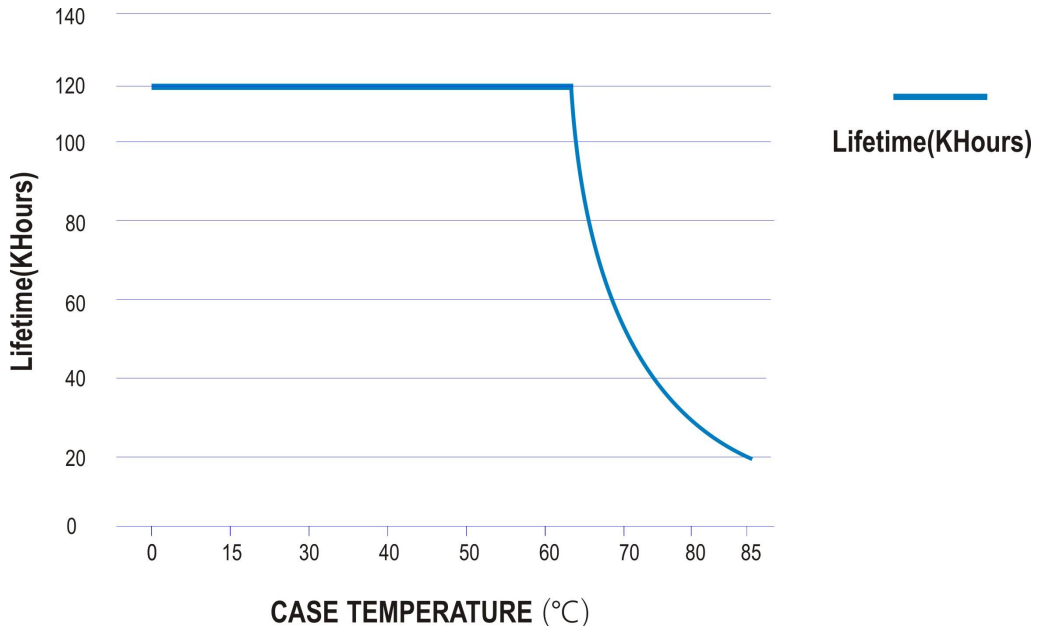
### 2.2.1 Power Factor Characteristic Curve



### 2.2.2 Power Efficiency Characteristic Curve



### 2.2.3 Lifetime Characteristic Curve

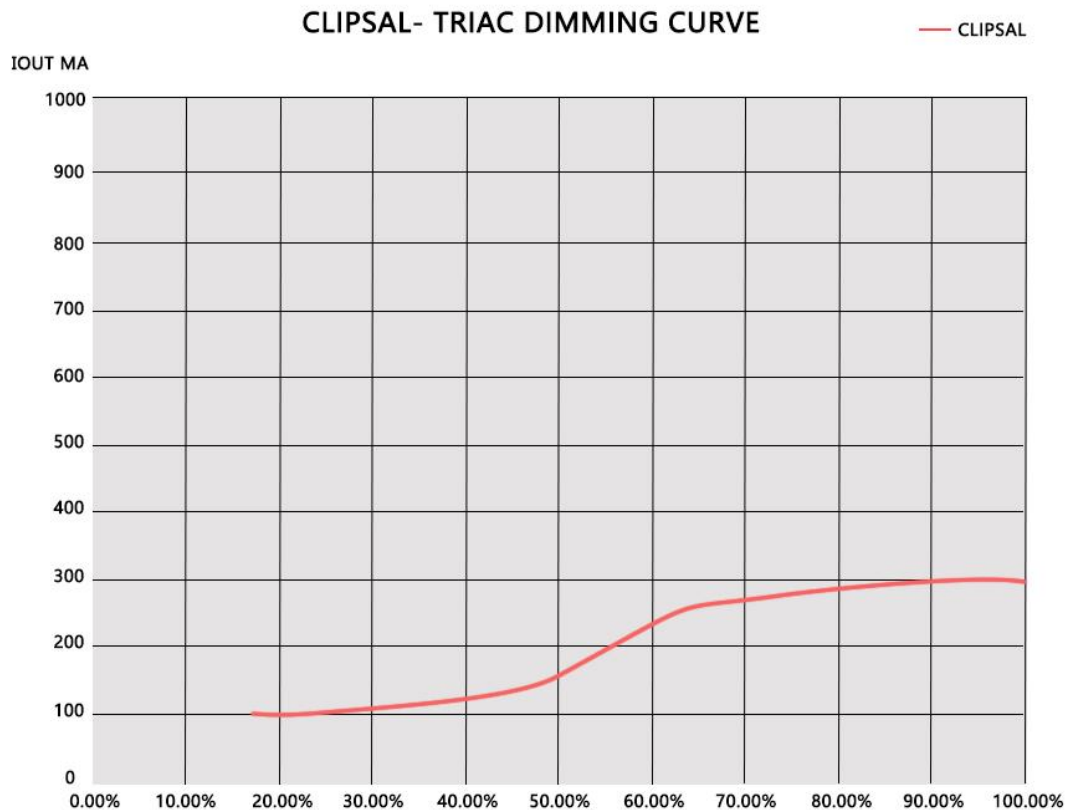


## 2.2.4 Dimming Curve

Model: BQ-030TNPC

Input: 220 ~ 240 VAC

Output: DC50-72V 300mA



Verified by the boqi team, this driver is compatible with these dimmers:

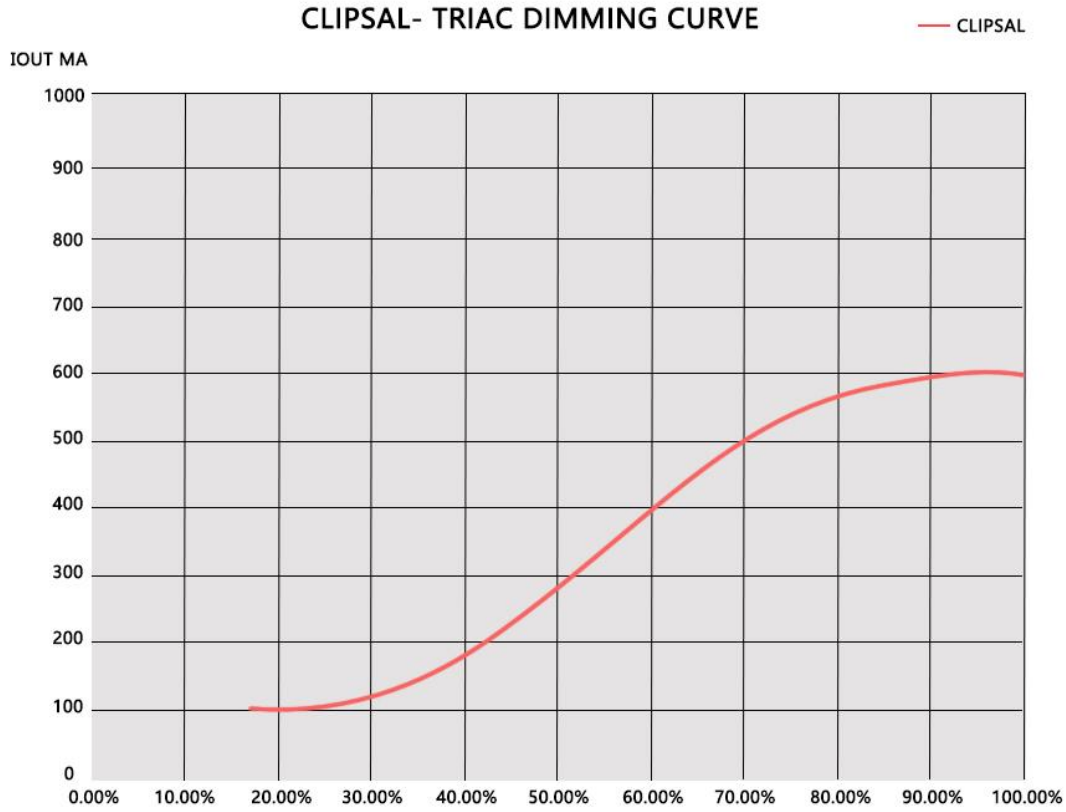
·CLIPSAL: 32E450UDM

·DIGINET: MEDM

Model: BQ-030TNPC

Input: 220 ~ 240 VAC

Output: DC24-42V 600mA



Verified by the boqi team, this driver is compatible with these dimmers:

- CLIPSAL: 32E450UDM
- DIGINET: MEDM

### 3. Real Photo

