

Product Specification

Title	TRIAC & Phase Cut Dimmable LED Driver
Model	BQ-020TNPV (Constant Voltage / Flicker Free)
Specification	Input: 220~240Vac 50/60Hz Output: 12V/1670mA 24V/840mA
Power Range	20W
Author	R&D
Document NO.	RDPS-2402
Date	2021-01-05
Revision	2.0

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)
155	53	30
±1	±1	±1

Features

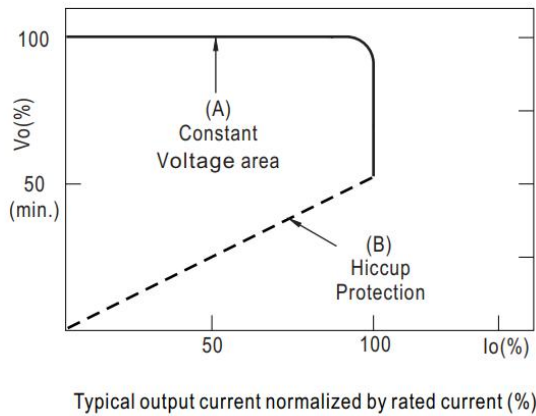
- 220~240Vac 50/60Hz
- Built-in active PFC function
- Flicker Free
- Short circuit, Over current, Over voltage Protection
- Air Cooling
- Applied to LED lighting etc
- No load and Safety Protection Device
- Installed economically and quickly
- Complied with the world safety standard of lighting
- Protection class II
- 5 years Warranty

Description

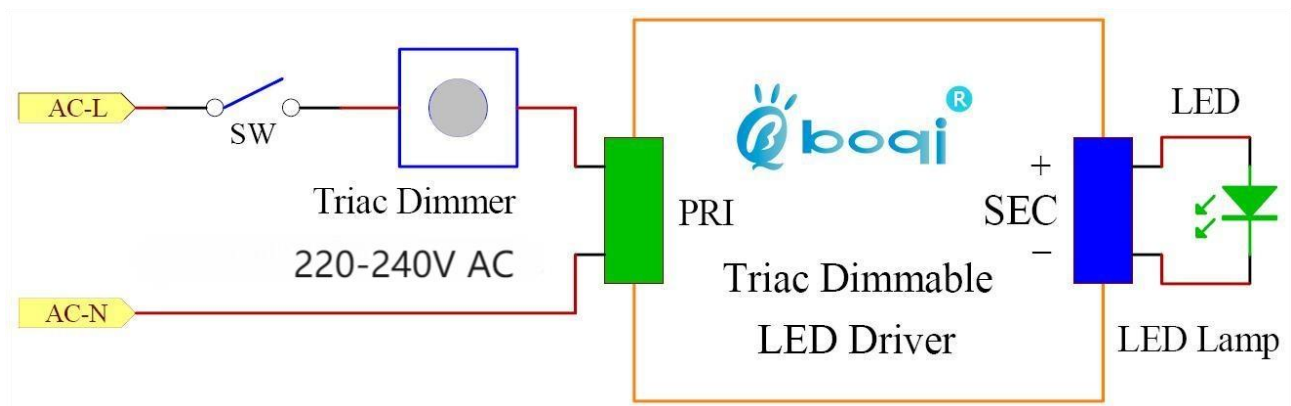
BQ-020TNPV TRIAC dimmable LED Driver is a kind of Constant Voltage LED power supply that our company R&D, with high power factor, high efficiency, high precision, adopting the high efficiency, stable, low loss of switch control chip. It was made with high-quality components, so it had the characteristics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

1.4 Working principle

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



1.5 Circuit Drawing



2. Electric Idiosyncrasy

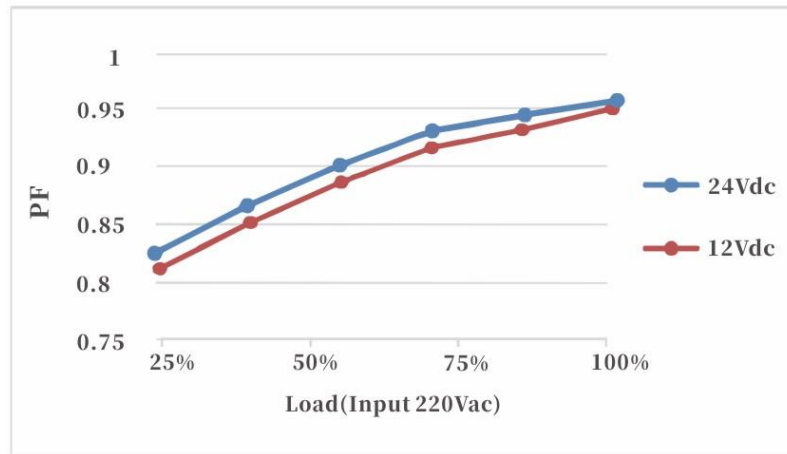


2.1 Specs.

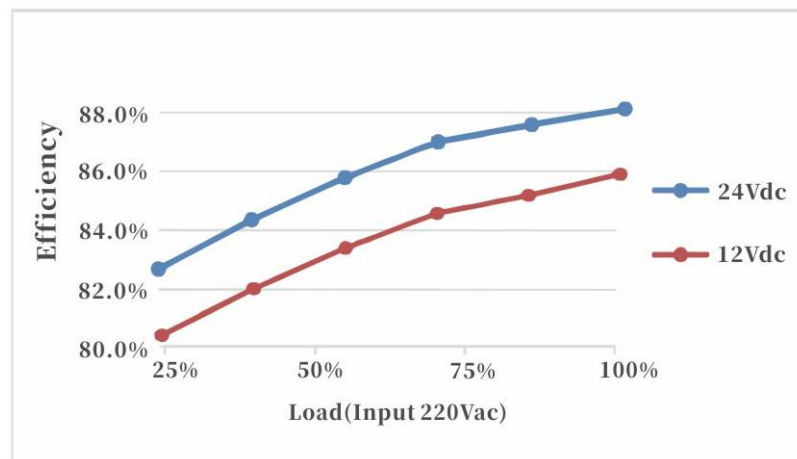
Model		BQ-020TNPV	
Output	DC Voltage	12V	24V
	Output Current	1670mA	840mA
	Output Power	20W	
	Flicker Index	Modulation depth $\leq 1\%$ Complies with the flicker-free standard (IEEE Std 1789-2015)	
	Ripple Voltage	$< 10\%$	
	Voltage Tolerance	$\pm 0.5V$	
	Temperature Drift	$\pm 5\%$	
	Start-up Time	$< 1.5S @ 230Vac$	
Input	Input Voltage	220-240VAC	
	Frequency Range	47-63Hz	
	Power Factor(Typ.)@ full load	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	$< 0.5mA$	
Protection	Short Circuit	shut down o/p voltage, re-power on to recover after fault condition is removed	
	Over temperature	100°C $\pm 10^\circ C$ shut down o/p voltage, automatically recover after cooling.	
Environment	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	
Safety & EMC	Safety standards	EN61347	
	Withstand voltage	I/P-O/P: 3.75KVac	
	Insulation Resistance	I/P-O/P: 100M Ω /500VDC/25°C/70%RH	
	EMC EMISSION	EN55015; EN61000-3-2; EN61000-3-3;	
	EMC IMMUNITY	EN61547	
Others	Dimming Function	Compatible with Leading and Trailing Edge Dimmer	
	Dimension	155*53*30 mm (L*W*H)	
	Warranty	5 Years	

2.2 Characteristic Curve

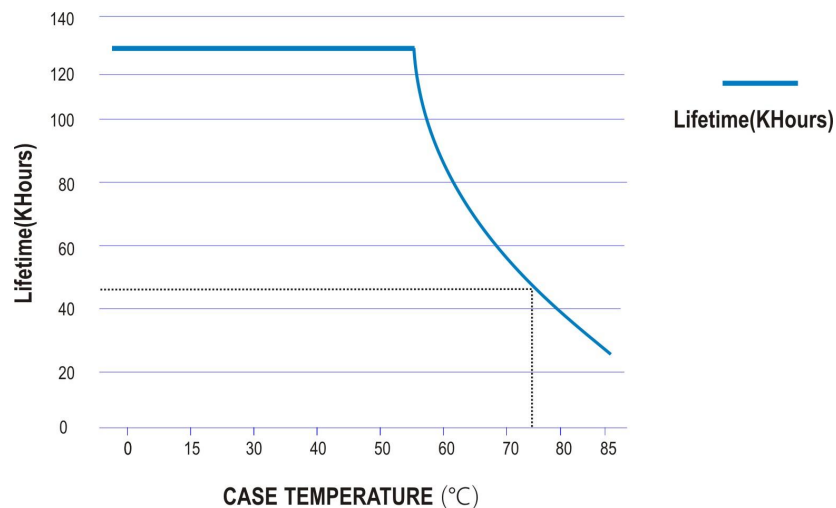
2.2.1 Power Factor Characteristic Curve



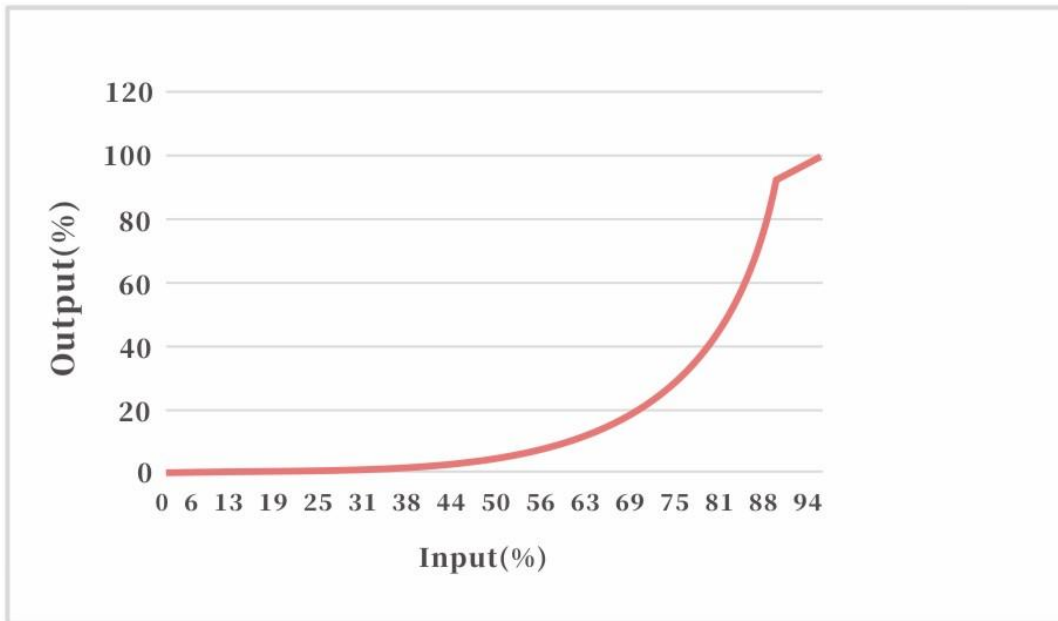
2.2.2 Power Efficiency Characteristic Curve



2.2.3 Lifetime Characteristic Curve



2.2.4 Dimming Curve



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

·CLIPSAL: 32E450UDM

·DIGINET: MEDM

3. Real Photo

