

Product Specification

Title	TRIAC & Phase Cut Dimmable LED Driver
Model	BQ-020TNPC (Flicker Free)
Specification	Input: 220~240Vac 50/60Hz Output: 36-60V/300mA 24-42V/450mA
Power Range	12-18W
Author	R&D
Document NO.	RDPS-2104
Date	2021-01-03
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

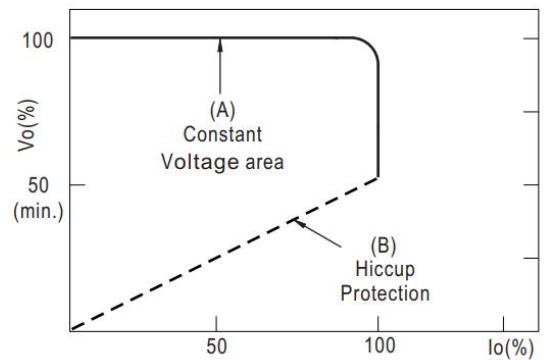


1.3 Physical size

L (mm)	W (mm)	H (mm)
100	43	21
±1	±1	±1

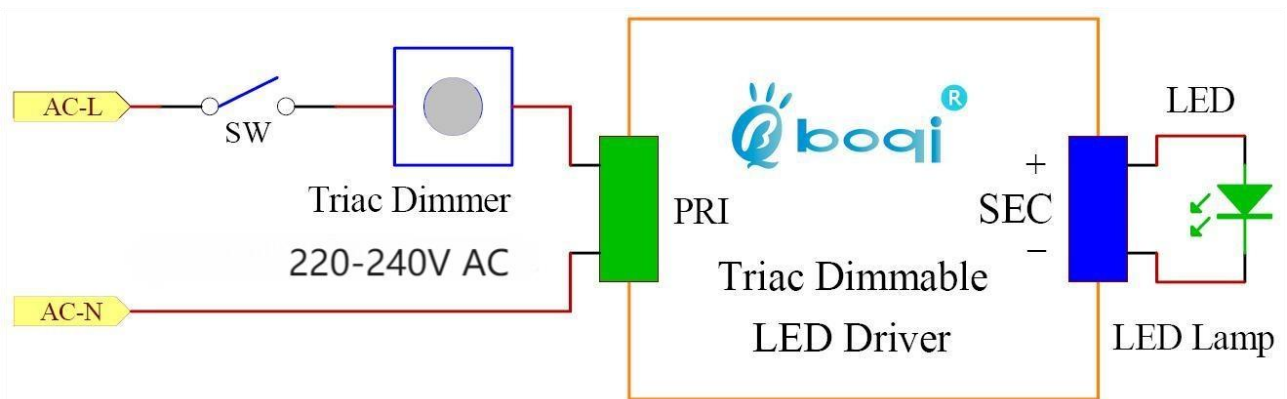
1.4 Working principle

BQ-020TNPC 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

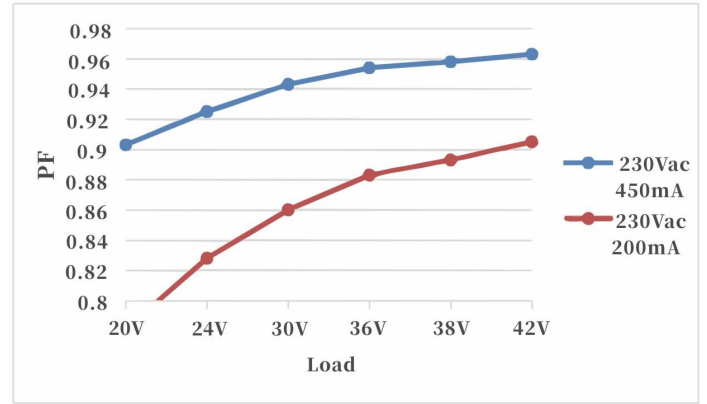
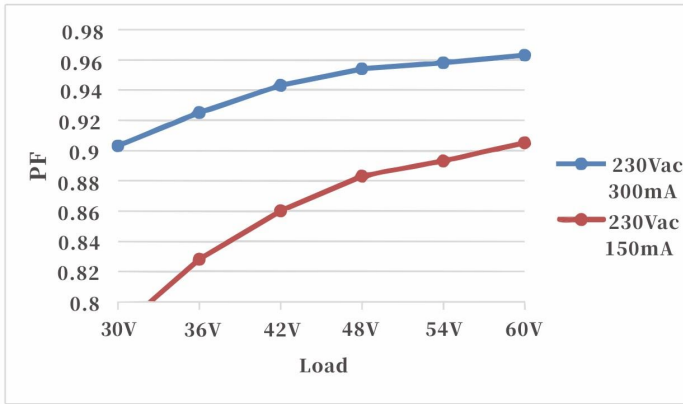


2.1 Specs.

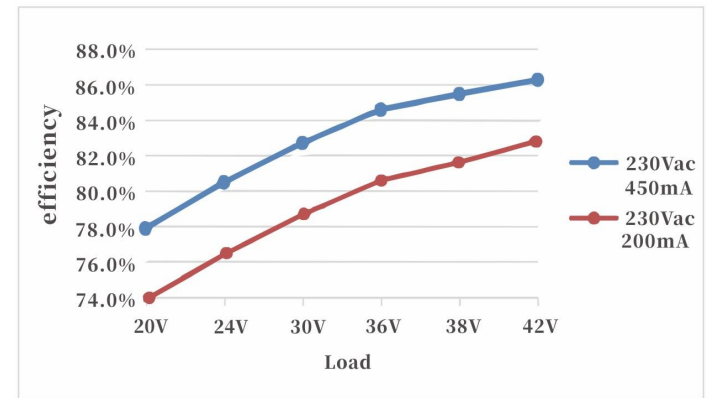
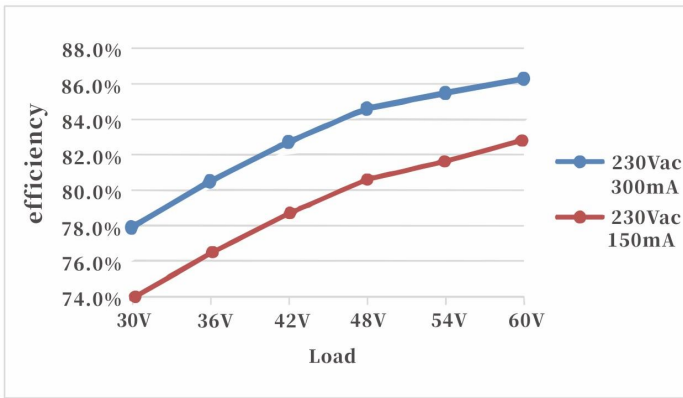
Model	BQ-020TNPC		
Output	DC Voltage	36-60V	24-42V
	Output Current	300mA	450mA
	Output Power	12-18W	
	Flicker Index	Modulation depth ≤1% Complies with the flicker-free standard (IEEE Std 1789-2015)	
	Current Tolerance	±5%	±5%
	Temperature Drift	±10%	
	Start-up Time	<1.5S@230Vac	
Input	Input Voltage	220-240VAC	
	Frequency Range	47-63Hz	
	Power Factor(Typ.)@ full load	0.92@115VAC 0.90@230VAC	
	THD(Typ.)@ full load	<20%@230Vac (DC42V full load)	
	Efficiency(Typ.)	86%@ full load	86%@ full load
	AC Current(Max.)	0.2A	
	Leakage current	<0.5mA	
	Standby Power Consumption	≤0.5W (when DALI OFF signal is effective)	
Protection	Short Circuit	Hiccup mode (auto-recovery)	
	Over temperature	100°C±10°C shut down o/p voltage, automatically recover after cooling.	
Environment	Working TEMP.	-20°C - +45°C	
	Working Humidity	20~90%RH, non-condensing	
	Storage TEMP.Humidity	-30~+80°C, 10~90%RH	
	Atmospheric Pressure	86kPa~106kPa	
Safety& EMC	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: 100MΩ/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	100*43*21 mm (L*W*H)	

2.2 Characteristic Curve

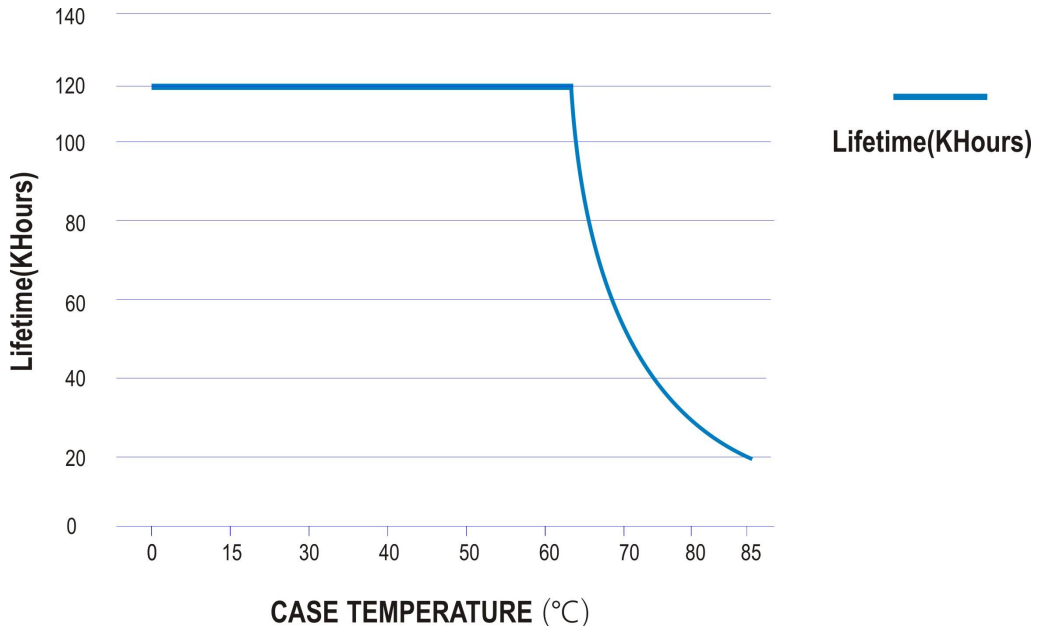
2.2.1 Power Factor Characteristic Curve



2.2.2 Power Efficiency Characteristic Curve



2.2.3 Lifetime Characteristic Curve

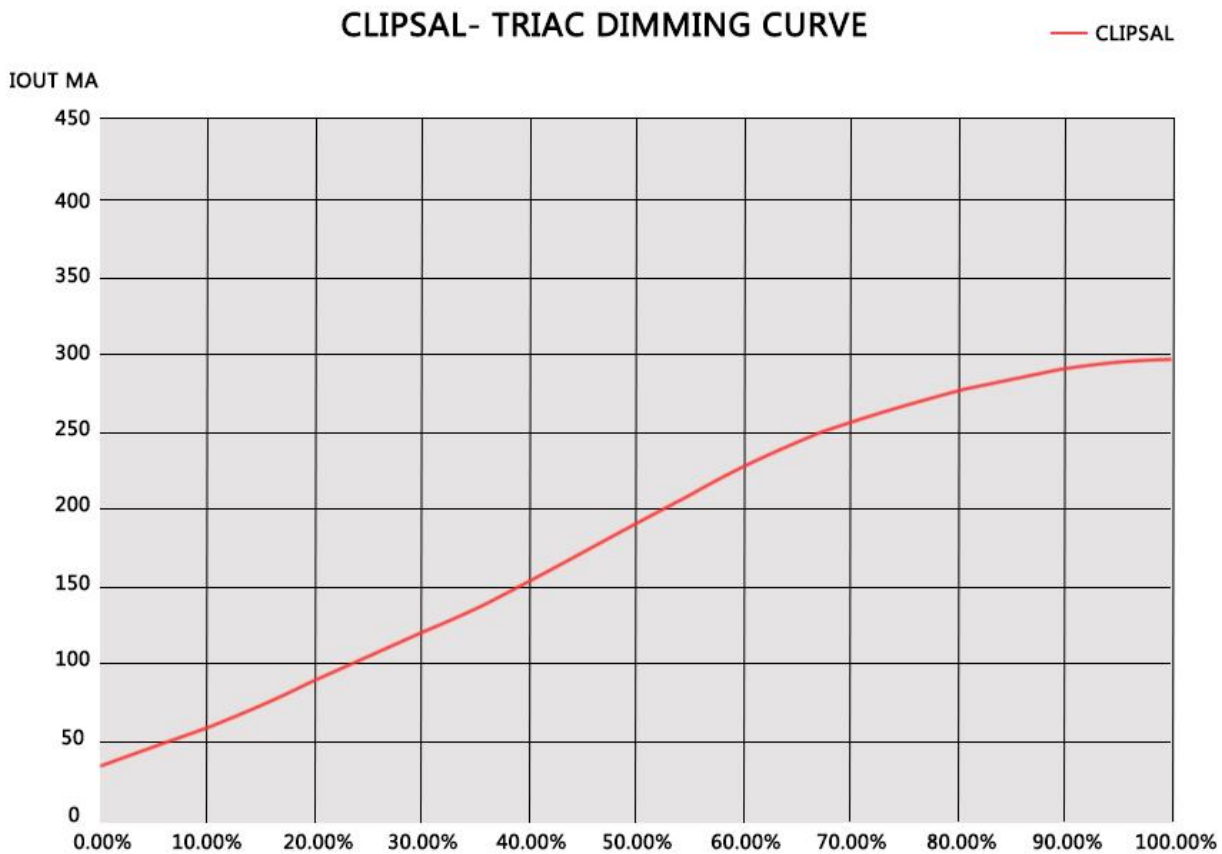


2.2.4 Dimming Curve

Model: BQ-020TNPC

Input: 220 ~ 240 VAC

Output: DC36-60V 300mA



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

·CLIPSAL: 32E450UDM

·DIGINET: MEDM

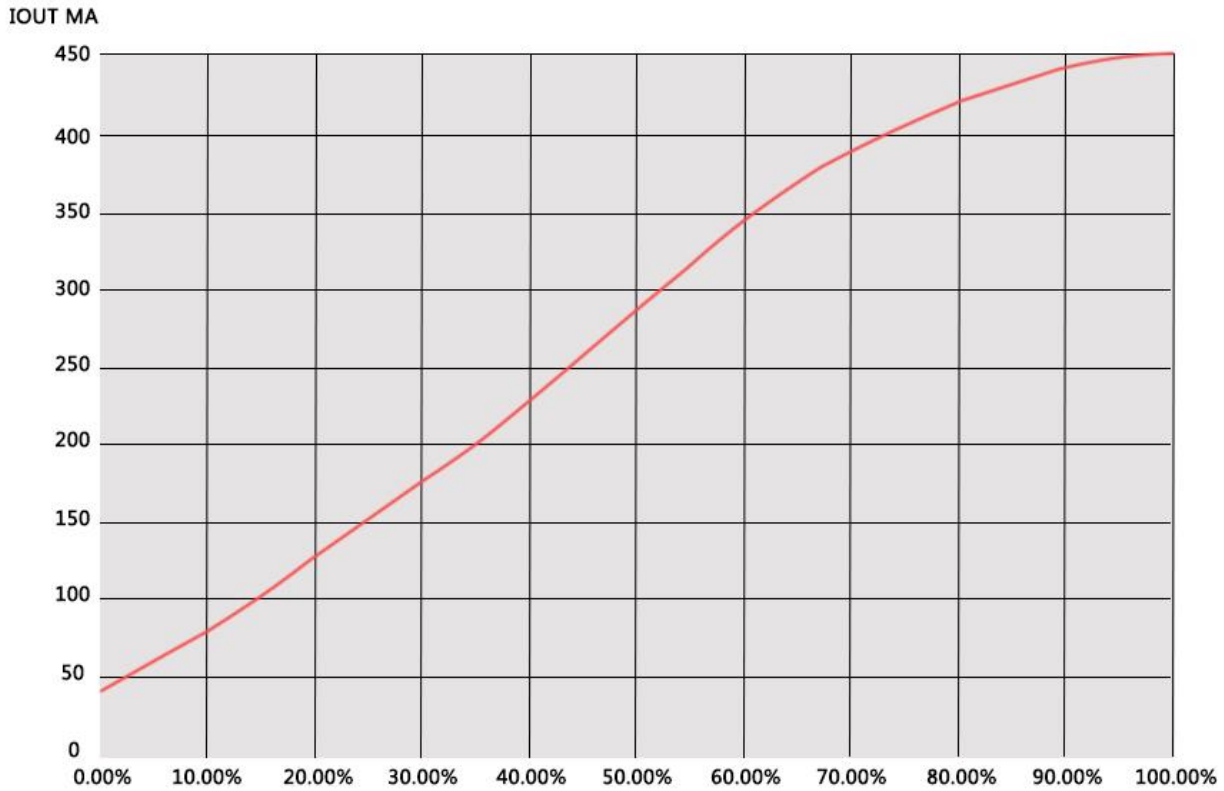
Model: BQ-020TNPC

Input: 220 ~ 240 VAC

Output: DC24-42V 450mA

CLIPSAL- TRIAC DIMMING CURVE

— CLIPSAL



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

·CLIPSAL: 32E450UDM

·DIGINET: MEDM

3. Real Photo

