

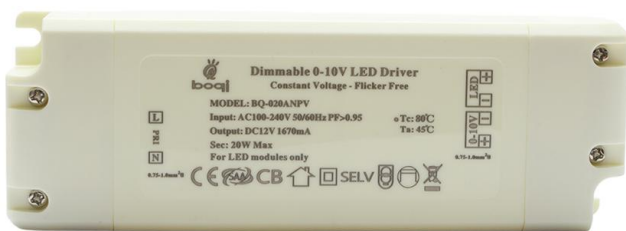
Product Specification

| | |
|----------------------|---|
| Title | 0-10V Dimmable LED Driver |
| Model | BQ-020ANPV (Constant Voltage / Flicker Free) |
| Specification | Input: 100~240Vac 50/60Hz Output: 12V/1670mA 24V/840mA |
| Power Range | 20W |
| Author | R&D |
| Document NO. | RDPS-2502 |
| Date | 2021-01-05 |
| Revision | 2.0 |

1. Product Description

1.1 This engineering report describes the design for a **0-10V 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
- 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

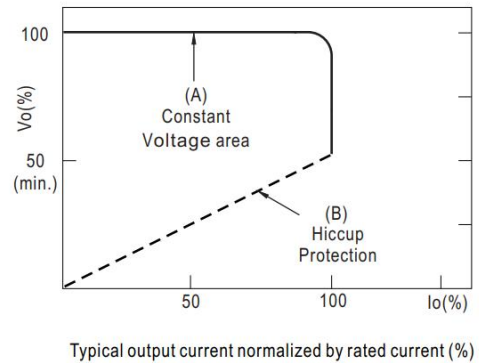
Description

BQ-020ANPV 0-10V 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-020ANPV 0-10V Dimmable LED

Driver is with the Constant Voltage feature,
the working condition is as the picture under.



1.5 Circuit Drawing



- Connect the 0-10V signals to the DIM terminal and the positive electrode connects to +, and the negative electrode connects to -.
- In 0-10V dimming mode, when the input voltage is less than 0.9V, the light will be turned off. When it's more than 0.9V, the light will be turned on. ($\pm 0.2V$ tolerance is acceptable.)
- The minimum dimming depth of 0-10V dimming is 0.5%.
- The pins of the 0-10V DIM terminal without any signal connected: 100% rated output current

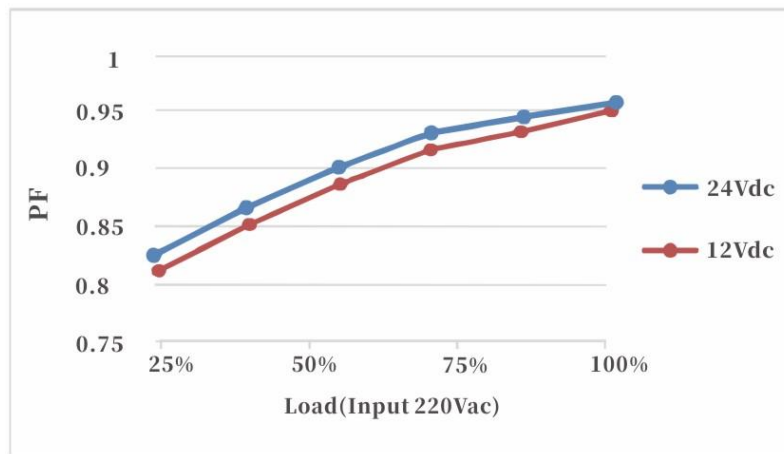
2. Electric Idiosyncrasy

2.1 Specs.

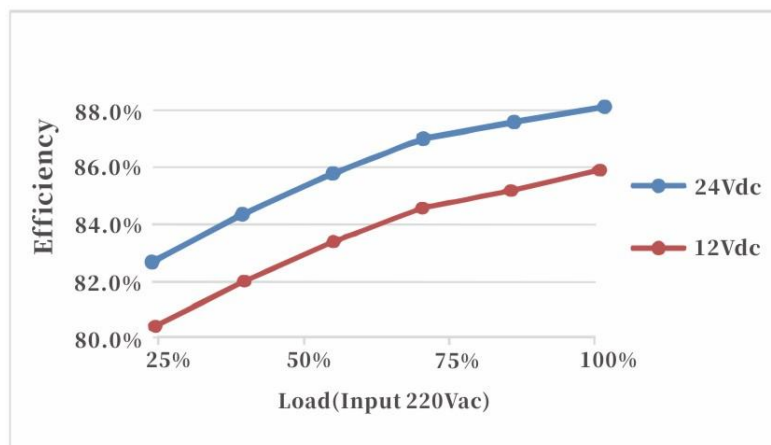
| Model | | BQ-020ANPV | |
|------------------------|-------------------------------|---|-------|
| Output | DC Voltage | 12V | 24V |
| | Output Current | 1670mA | 840mA |
| | Output Power | 20W | |
| | Flicker Index | Modulation depth ≤1% Complies with the flicker-free standard (IEEE Std 1789-2015) | |
| | Ripple Voltage | <10% | |
| | Voltage Tolerance | ±0.5V | |
| | Temperature Drift | ±5% | |
| | Start-up Time | <1.5S@230Vac | |
| Input | 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 | |
| Protection | Short Circuit | shut down o/p voltage, re-power on to recover after fault condition is removed | |
| | Over temperature | 100°C±10°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:100MΩ/500VDC/25°C/70%RH | |
| | EMC EMISSION | EN55015; EN61000-3-2; EN61000-3-3; | |
| | EMC IMMUNITY | EN61547 | |
| Others | Dimming Function | 0-10V | |
| | Dimension | 155*53*30 mm (L*W*H) | |
| | Warranty | 5 Years | |

2.2 Characteristic Curve

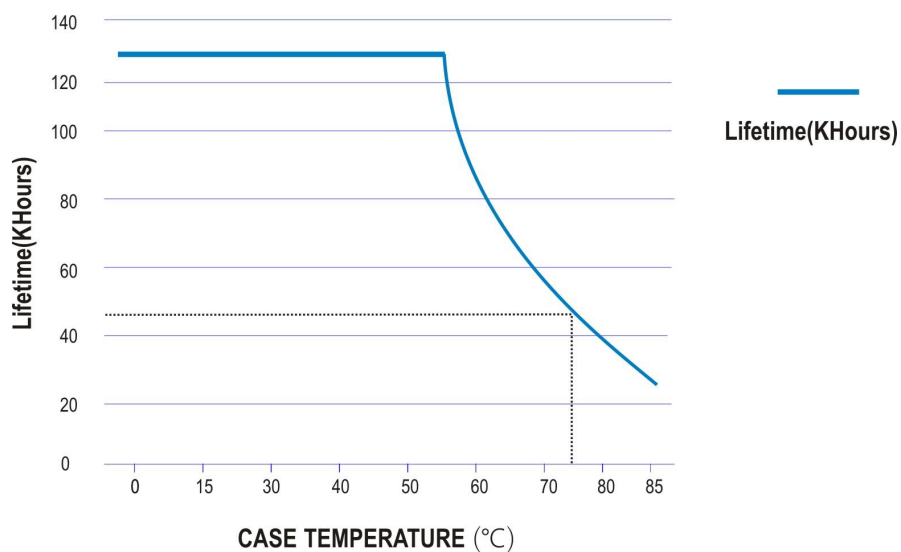
2.2.1 Power Factor Characteristic Curve



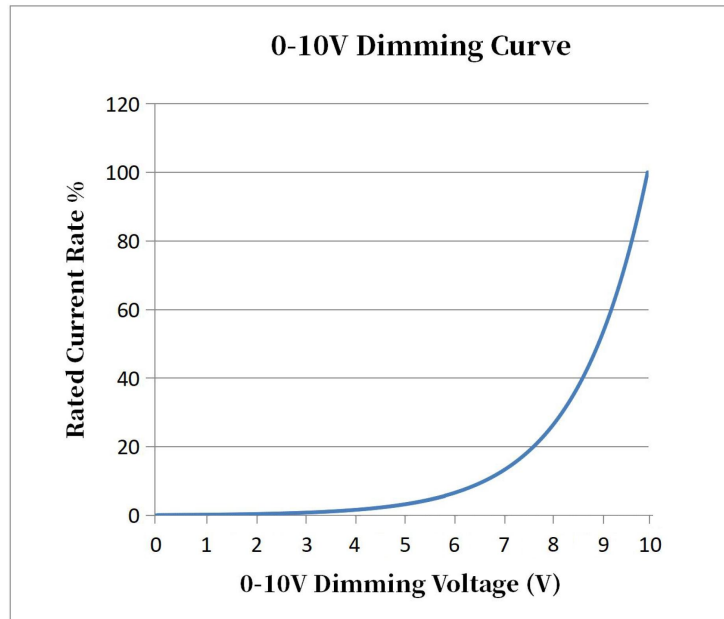
2.2.2 Power Efficiency Characteristic Curve



2.2.3 Lifetime Characteristic Curve



2.2.4 Dimming Curve



3. Real Photo

