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| MOONS' | RELEASE DEPARTMENT: R&D | PAGE: 1 of 8 |
| | TITLE: MU050S150BQI501 SPECIFICATIONS | |
| | | REVISION: A1 |

oc No.: MSSD-6645 A1

LED DRIVER SPECIFICATIONS

Part Description: Input:90AC~305VAC,

Customer's Part Number:

MOONS' Part Number: **MU050S150BQI501**

Customer:

| |
|--|
| <p>Company:</p> <p>Department:</p> <p>Approved by:</p> <p>Date:</p> |
|--|

EDITED:

DATE:

CHECKED:

DATE:

STANDARD:

DATE:

APPROVED:

DATE:

SHANGHAI MOONS' AUTOMATION CONTROL Co., LTD.



- **Features**
 - ◆ Input voltage: 100~277Vac , 140-388Vdc
 - ◆ Built-in active PFC function 0.95 Typ.
 - ◆ High efficiency: up to 87% Typ.
 - ◆ Constant current, 2 channels output
 - ◆ Support DALI Dimming, DALI-2 Certificated
 - ◆ 4 in 1: DT8 tunable white(1500-6500K); DT6 tunable white(1500-6500K), solo dimming, dual dimming
 - ◆ Output current can be set from 150~1500mA
 - ◆ AUX output 12V, 150mA
 - ◆ Protection: OVP, SCP, OPP, OTP
 - ◆ According with UL Class2、EN SELV
 - ◆ 5-year warranty

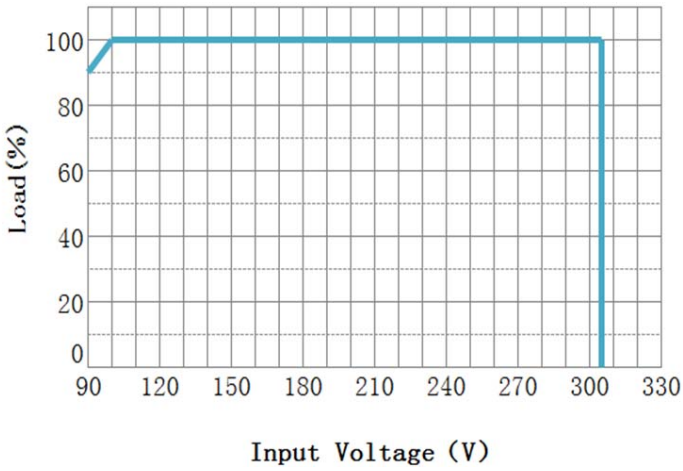
■ Specification

| Model (MU050S150BQI501) | | | | | | |
|----------------------------|---|---|---------------|---------------|-------------------|-----------|
| Input | Efficiency(230Vac) | 87% (Typical) at 55V/0.91A load condition | | | | |
| | Efficiency(120Vac) | 87% (Typical) at 55V/0.91A load condition | | | | |
| | Voltage Range | 90-305Vac , 126-427Vdc | | | | |
| | Rated Input Voltage | 100-277Vac , 140-388Vdc | | | | |
| | Frequency Range (Hz) | 50/60 | | | | |
| | Power Factor | >0.9 at 100~277Vac 50/60Hz input, with 60%~100% load conditions | | | | |
| | THD | < 20%, at 100~277Vac 50/60Hz input, with 60%~100% load conditions | | | | |
| | AC Current(Typ.) | 0.55A MAX at 120VAC , 0.3A MAX at 230VAC | | | | |
| | Inrush Current(Typ.) | <10A at 100~277Vac input 25°C cold start at 100% conditions .for more details in the attached graph | | | | |
| | Input Power (W) | 60(max) | | | | |
| | Standby power (W) | <0.5W at input 120Vac, 230Vac | | | | |
| Leakage Current(max.) | 0.75mA at 277Vac 60Hz input | | | | | |
| Output | Output Voltage Range (V) _{Note.1} | 8-55 | | | | |
| | Output Current Range(mA) | 150-1500.Support hot plug, without overshoot current . | | | | |
| | Rated Power (W) | 50(max) | | | | |
| | Output channels | 2 | | | | |
| | Ripple Current | Output current 200~1500mA ripple LF(<120HZ) ≤ 3% Ripple = peak / average; ripple HF ≤ 30% | | | | |
| | Current Tolerance | ±5% | | | | |
| | Line Regulation | ±1% | | | | |
| | Load Regulation | ±3% | | | | |
| | Setup, Rise Time | <0.5S @ 120V/60HZ, 230V/50HZ | | | | |
| AUX output | 12V±3%, 150mA max | | | | | |
| Dimming Control | DALI dimming / 0.1%lo~100%lo ref. Dimming module diagram and dimming curve | | | | | |
| Protection | Open circuit protection(V) | 60 | | | | |
| | Short Circuit | Power supply stops output, recovers automatically when fault condition removed | | | | |
| | Over Power | Solo&Dual dimming the current drops by 5% per 100ms; Tunable white each time drops 10% | | | | |
| | Over Temperature | tc 100°C±10%. Hiccup mode,When the temperature of tc rise to 100°C(Typ.) | | | | |
| Environment | Operating Temp. | -25~+65°C; tc 90°C | | | | |
| | Operating Humidity | 20~95%RH, non-condensing | | | | |
| | Storage Temp., Humidity | -40~+85°C, 10-95%RH | | | | |
| | Vibration | 10~500Hz, 5G 12min/cycle, period for 72min each along X、Y、Z axis | | | | |
| | Ingress Protection Rating | IP20 | | | | |
| Safety & EMC | Safety Standard | UL8750, CSA C22.2 No.250.13-14, EN61347-1, EN61347-2-13 | | | | |
| | | Isolation | Input | Output | Dimming interface | Enclosure |
| | | Input | No applicable | 3.75KV | 3KV | 1.875KV |
| | | Output | 3.75KV | No applicable | 500V | 1.5KV |
| | | Dimming interface | 1.6KV | 1.6KV | No applicable | 500V |
| | Enclosure | 1.875KV | 1.5KV | 500V | No applicable | |
| Isolation Resistance | I/P-O/P ,I/P-FG,O/P-FG:100M Ohms/500VDC/25°C/70%RH | | | | | |
| EMC Emission | FCC Part 15 ClassB, EN55015, EN61000-3-2 Class C, EN61000-3-3 | | | | | |
| EMC Immunity | EN61000-4-2,3,4,5,6,8,11, EN61547 (Surge L,N-FG 2KV, L-N 1KV) Additional suger test L,N-FG 2.5KV;L-N 2.5KV | | | | | |
| Others | Life time | >50000@Tc =75°C at 100% load conditions | | | | |
| | MTBF | 300,000 hours, measured at full load, 25°C ambient temperature MIL-HDBK-217F(25°C) | | | | |
| | Dimension (LxWxH) | 408 x 30 x 21 mm / 16.06 x 1.18 x 0.83 in | | | | |
| | Weight | 420g | | | | |

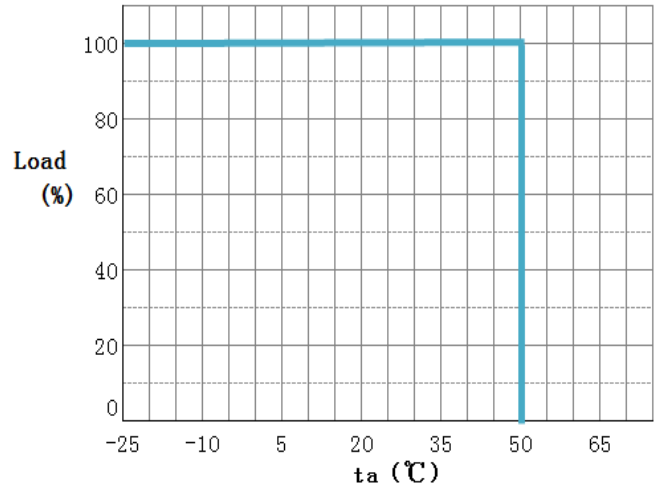
Note.1: refer to V/I curve

■ Curve

Derating Curve

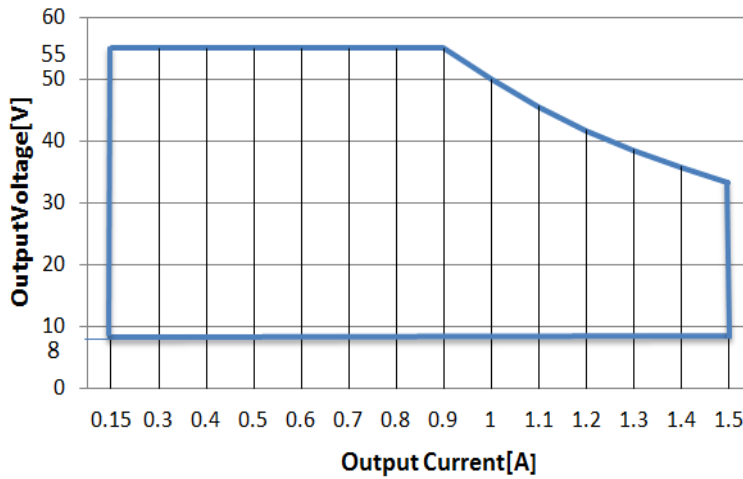


Derating Curve



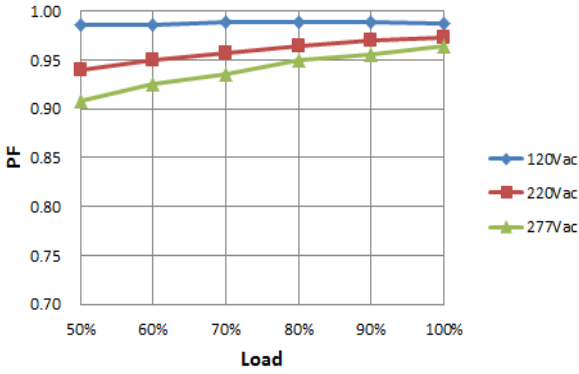
V/I Curve

OPERATING RANGE/50W

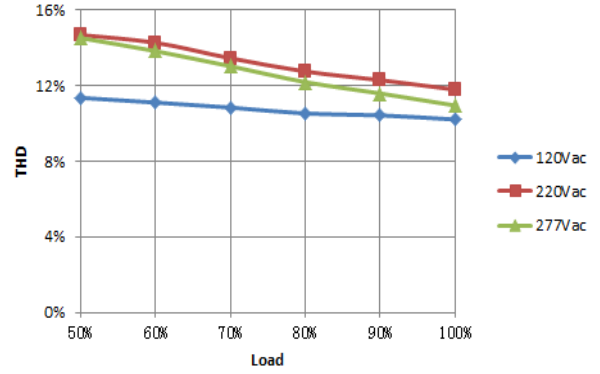


■ Curve

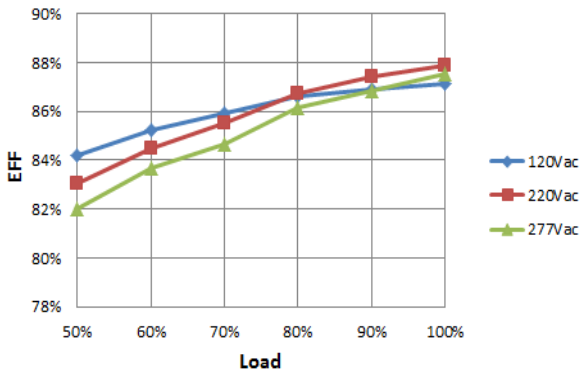
PF VS. Load Curve



THD VS. Load Curve

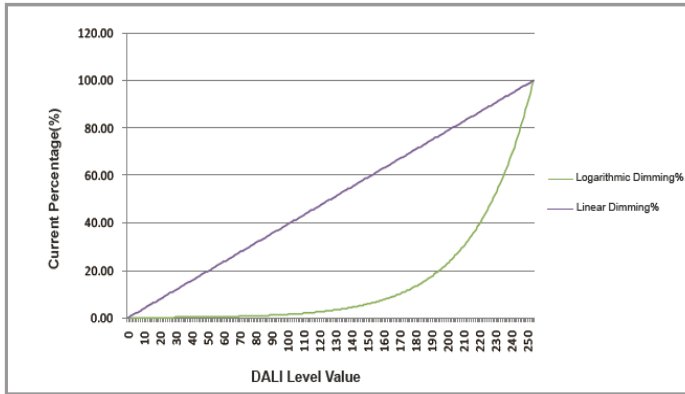


Efficiency VS. Load Curve

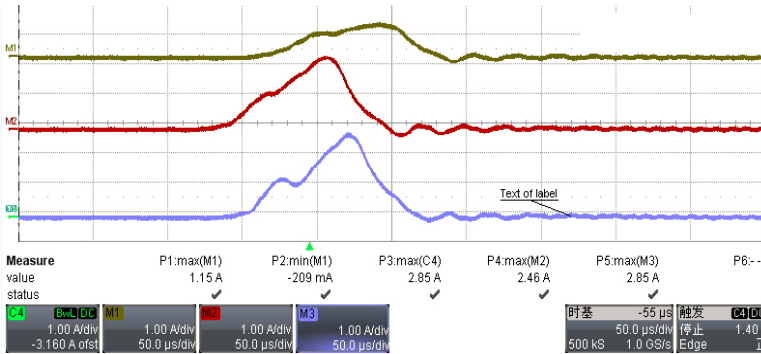


Curve

DALI Curve



Inrush current waveform



Inrush current information

| Input voltage | Ipeak | Time@50% of Ipeak |
|---------------|-------|-------------------|
| 120VAC | 1.15 | 50us |
| 220VAC | 2.46 | 50us |
| 277VAC | 2.85 | 60us |

Max number of drivers per MCB

| Item | Max. number of drivers | | |
|----------------|------------------------|-----|-----|
| | 120 | 220 | 277 |
| MCB B type 10A | 16 | 30 | 34 |
| MCB B type 13A | 21 | 38 | 45 |
| MCB B type 16A | 26 | 47 | 56 |
| MCB B type 20A | 32 | 59 | 70 |
| MCB B type 25A | 40 | 74 | 87 |

■ Application of introduction

1. DALI interface

- Comply with IEC62386-102(2.0), IEC62386-207, IEC62386-209
- update Online, use smart key to connect PC and the driver to update the firmware.

2. MCS interface(MCS+/MCS-)

- MCS+ interface voltage 15V
- Max current setting(each step is 1 mA), default driving current defined as 350mA.
- Log or linear dimming curve, default setting is log dimming.
- NTC thermal management protects LED lamp, when the temperature of LED lamp over temperature protection point, the current will be reduced by 50% every 5 minutes. Default setting is 85°C.

| NTC compatibility list | NTC Manufacturer | | NTC Model NO. | |
|------------------------|------------------|--------|------------------|--|
| | | MURATA | NCP21WB473J03RA | |
| | | VISHAY | NTCS0805e4473JXT | |
| | | VISHAY | NTCLE100E3473 | |

- Control the status of Auxiliary power when dim level =0. Enable standby mode: when dim level =0, the Auxiliary power will be closed. Disable standby mode: when dim level =0, the auxiliary power still can work. Default setting is enable

3. Dimming performance

- When changed to any dimming level, flicker wouldn't occur, dimming would be achieved smoothly.
- In the range of 200~1500mA, the current operating in continuous mode; In the range of 0~200mA, the current operating in PWM dimming mode, and the PWM frequency 3.6KHZ.

4. Guide for setting driver's parameters Touch setting

- Touch Setting
Program driver's parameters quickly and easily through Near Field Communication. Software download link:
http://leddriver.moons.com.cn/SouProduct/Ucenter/M_Search/Software_view.aspx?MATNR=TouchSetting&rnd=1411
- Smartkey Network
Driver's parameters can be set through Smartkey Ver.A1 and Smartkey Network. What's more, driver's firmware can be updated through this tool. Software download link:
http://leddriver.moons.com.cn/SouProduct/Ucenter/M_Search/Software_view.aspx?MATNR=SmartkeyNetwork&rnd=1411

5. DT8 Tunable white; DT6 Tunable white、Solo dimming、Dual dimming function introduction

Channel Definition

| | | |
|-----------------------|--------------------|-----|
| DT8/DT6 Tunable white | Cold color channel | CH1 |
| | Warm color channel | CH2 |

Function Description

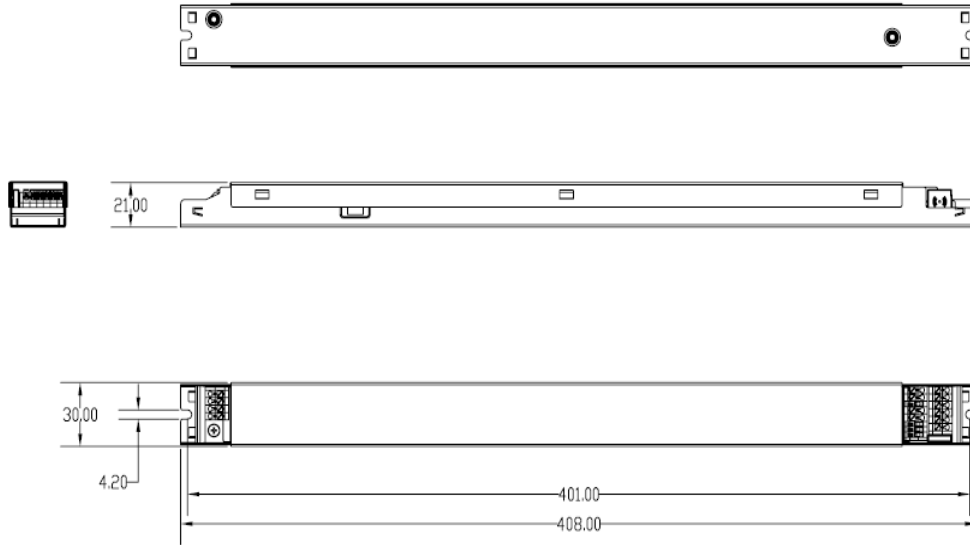
| | | |
|-------------------|--|--|
| DT8 Tunable white | One address controls intensity and color temperature | |
| DT6 Tunable white | Address X controls intensity | |
| | Address X+1 controls color temperature | |
| DT6 | Solo dimming | Dim two channels through 1 address simultaneously. |
| | Dual dimming | Dim two channels through 2 addresses respectively. |

6. Default factory settings

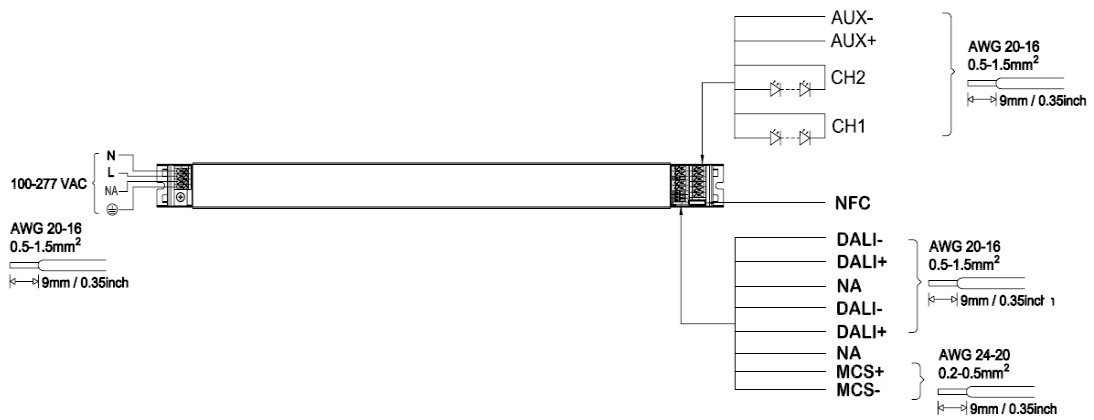
The screenshot shows a software interface with a top navigation bar containing icons for Load, Save, Read, Write, and Setting. Below this, there are sections for 'Current' and 'General Setting'. The 'Current' section has sliders for Channel 1 and Channel 2, both set to 350 mA. The 'General Setting' section includes dropdown menus for Dimming Strategy (DT 8 CCT Driver), Dimming Curve (Logarithmic), and AUX Enable (Enable). It also features input fields for Minimum Dimming Level (0.1%), NTC (85), and Physical CCT (Warmest: 2500 K, Coolest: 6500 K). Logical CCT settings are identical to the physical ones.

■ **Mechanical Specification**

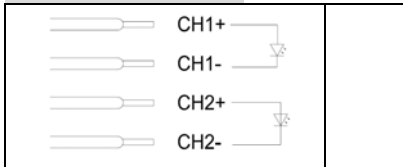
Dimensions(Unit:mm)



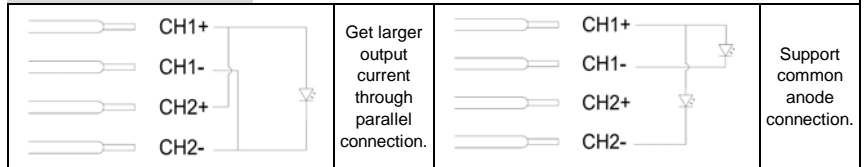
Port:



Normal connection using



Special connection using



RoHS Compliance:

Our products comply with the European Directive 2002/95/EC, calling for the elimination of lead and other hazardous substances from electronic products.