MU050S150BQI503 Intelligent indoor LED driver

■ 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 bus providing a 15V, 100mA current limited source.
- ◆4 in 1: DT8 tunable white(1500-6700K); DT6 tunable white(1500~6700K), 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 (MU050S150BQI503)		
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 50%～100% load conditions
	THD	< 20%, at 100～277Vac 50/60Hz input, with 50%～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℃ 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. When DALI bus power supply is closed.
	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
	DALI bus power supply	15V±5%, 100mA max. It can be closed or open by software
	AUX output	12V±3%, 150mA max
Dimming Control		DALI dimming / 0.1%Io~100%Io 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&Dim to warm each time drops 10%
	Over Temperature	tc 100℃±10%. Hiccup mode,When the temperature of tc rise to 100℃(Typ.)
Environment	Operating Temp.	-25~+65℃； tc 90℃
	Operating Humidity	20~95%RH, non-condensing
	Storage Temp., Humidity	-40~+85℃, 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 Resistance	I/P-O/P ,I/P-FG,O/P-FG:100M Ohms/500VDC/25℃/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 hours@Tc =75℃ at 100% load conditions
	MTBF	300,000 hours, measured at full load, 25℃ ambient temperature MIL-HDBK-217F(25℃)
	Dimension	408 x 30 x 21 mm / 16.06 x 1.18 x 0.83 in
	Weight	420g

Isolation	Input	Output	Dimming interface	Enclosure
Input	No applicable	3.75KV	3KV	1.875KV
Output	3.75KV	No applicable	500V	1.5KV
Dimming interface	3KV	500V	No applicable	500V
Enclosure	1.875KV	1.5KV	500V	No applicable

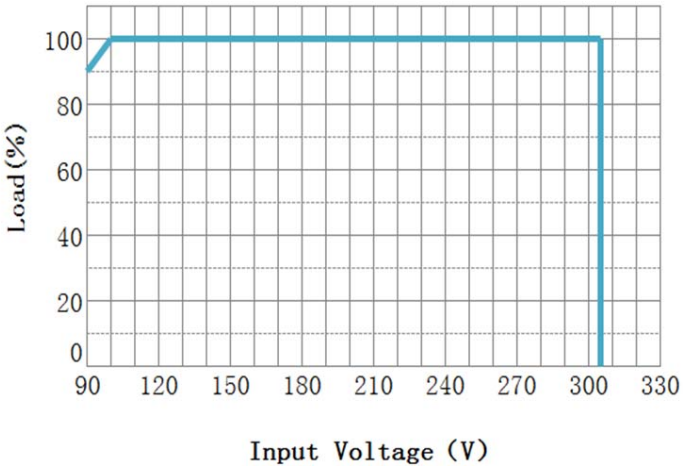
Note.1: refer to V/I curve

SHANGHAI MOONS' AUTOMATION CONTROL CO., LTD.
Add: No.168, Mingjia Road, Minbei Industrial Park, Shanghai 201107, P.R.China
Tel: +86 (0)21 52634688 Website: www.moons.com.cn

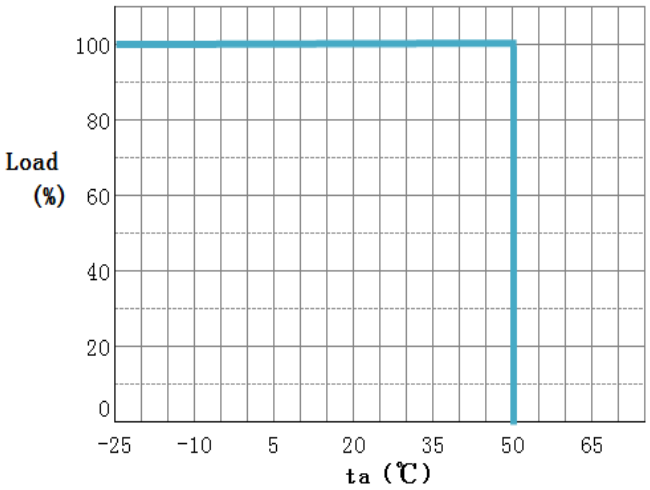
Downloaded from Arrow.com.

■ Curve

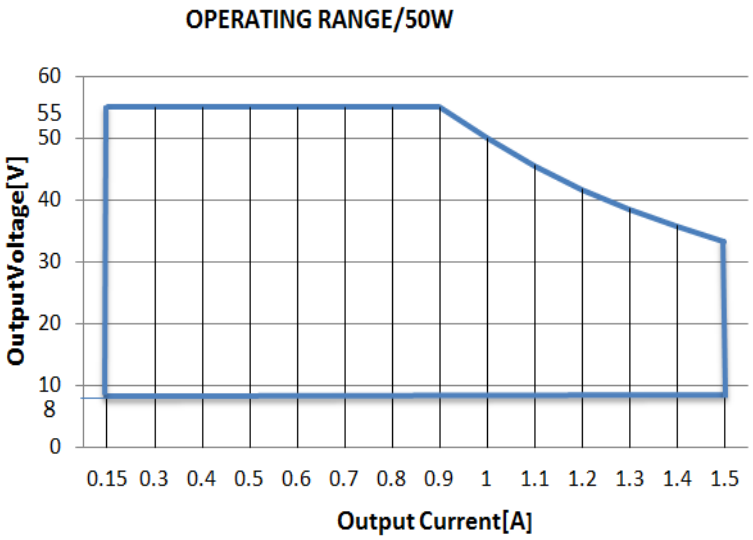
Derating Curve



Derating Curve



V/I Curve



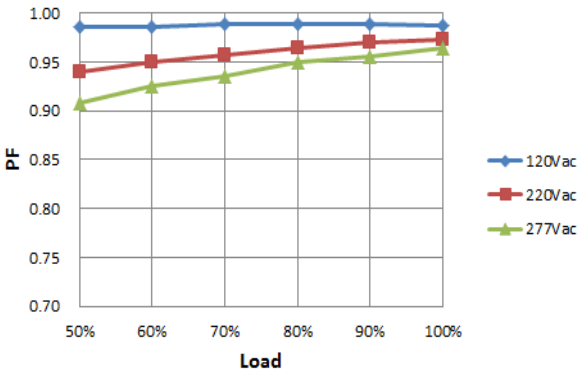
All Rights Reserved 2017-03-27

SHANGHAI MOONS' AUTOMATION CONTROL CO., LTD.
Add: No.168, Mingjia Road, Minbei Industrial Park, Shanghai 201107, P.R.China
Tel: +86 (0)21 52634688 Website: www.moons.com.cn

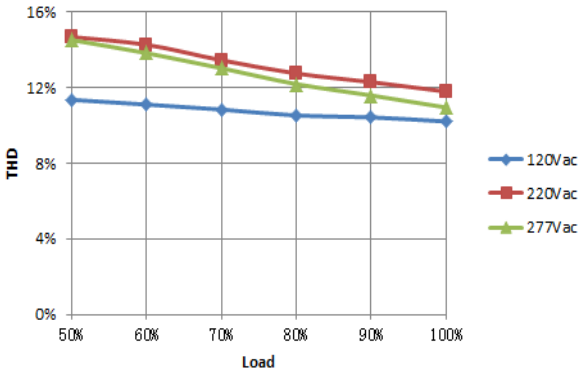
Downloaded from Arrow.com.

■ Curve

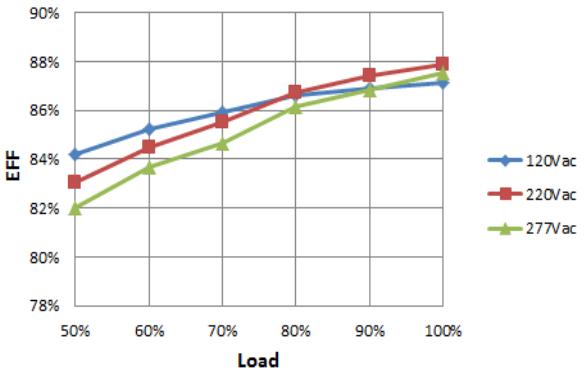
PF VS. Load Curve



THD VS. Load Curve



Efficiency VS. Load Curve



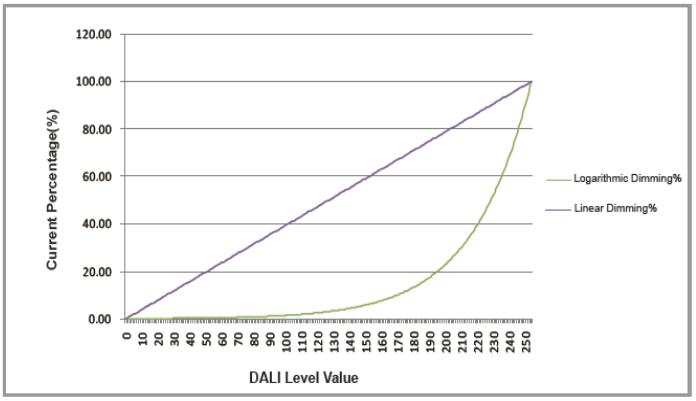
All Rights Reserved 2017-03-27

SHANGHAI MOONS' AUTOMATION CONTROL CO., LTD.
Add: No.168, Mingjia Road, Minbei Industrial Park, Shanghai 201107, P.R.China
Tel: +86 (0)21 52634688 Website: www.moons.com.cn

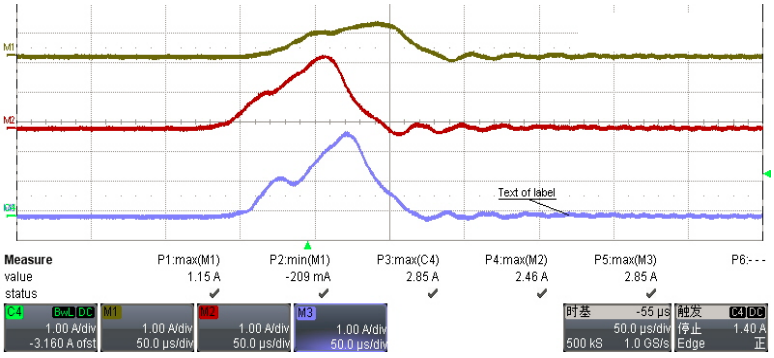
Downloaded from Arrow.com.

■ 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		
Input voltage [VAC]	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

SHANGHAI MOONS' AUTOMATION CONTROL CO., LTD.
Add: No.168, Mingjia Road, Minbei Industrial Park, Shanghai 201107, P.R.China
Tel: +86 (0)21 52634688 Website: www.moons.com.cn

Downloaded from Arrow.com.

■ 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℃.

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

- ●Control Dali bus 15V/100mA enable or disable, default setting is disable.
- ●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 parametersTouch 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.

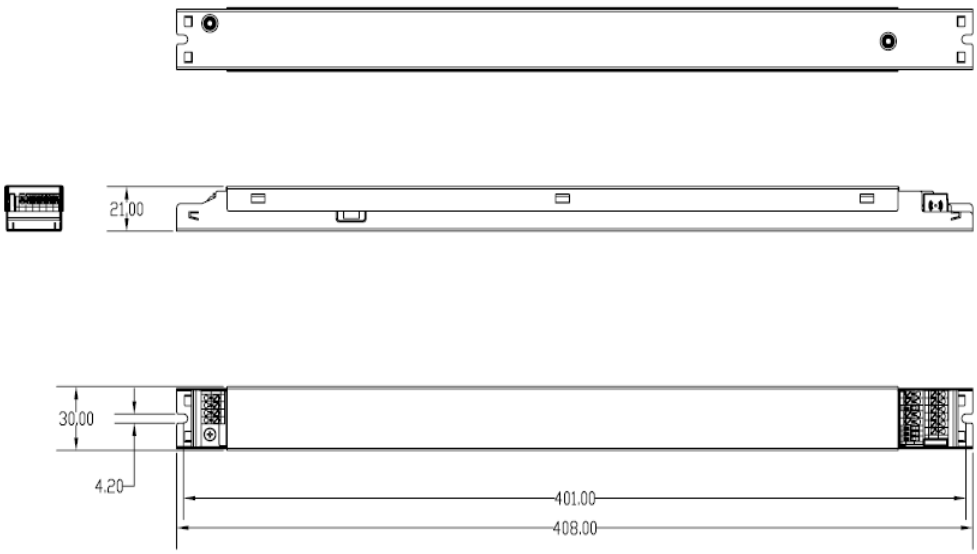
All Rights Reserved 2017-03-27

SHANGHAI MOONS' AUTOMATION CONTROL CO., LTD.
Add: No.168, Mingjia Road, Minbei Industrial Park, Shanghai 201107, P.R.China
Tel: +86 (0)21 52634688 Website: www.moons.com.cn

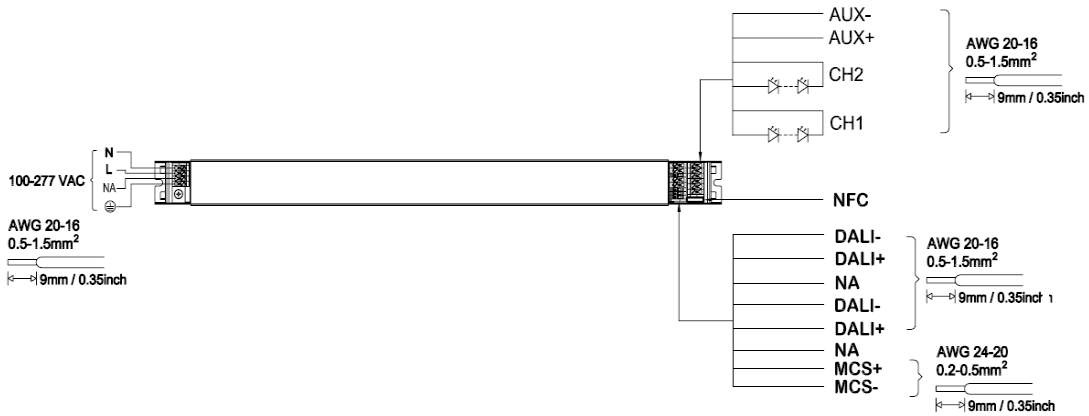
Downloaded from Arrow.com.

■ Mechanical Specification

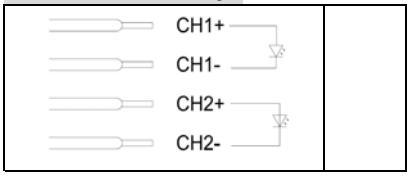
Dimensions(Unit:mm)



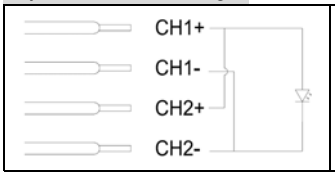
Port:



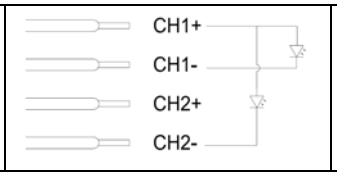
Normal connection using



Special connection using



Get larger output current through parallel connection.



Support common anode connection.

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.

SHANGHAI MOONS' AUTOMATION CONTROL CO., LTD.
Add: No.168, Mingjia Road, Minbei Industrial Park, Shanghai 201107, P.R.China
Tel: +86 (0)21 52634688 Website: www.moons.com.cn

Downloaded from Arrow.com.