

MOONS'	RELEASE DEPARTMENT: R&D	PAGE: 1 of 8
	TITLE: MU040I180AQI51 SPECIFICATIONS	
		REVISION: A0

oc No.: MSSD-6247 A0

LED DRIVER SPECIFICATIONS

Part Description: Input:90AC~305VAC,

Customer's Part Number:

MOONS' Part Number: **MU040I180AQI51**

Customer:

<p>Company:</p> <p>Department:</p> <p>Approved by:</p> <p>Date:</p>
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EDITED:

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STANDARD:

DATE:

APPROVED:

DATE:

SHANGHAI MOONS' AUTOMATION CONTROL Co., LTD.



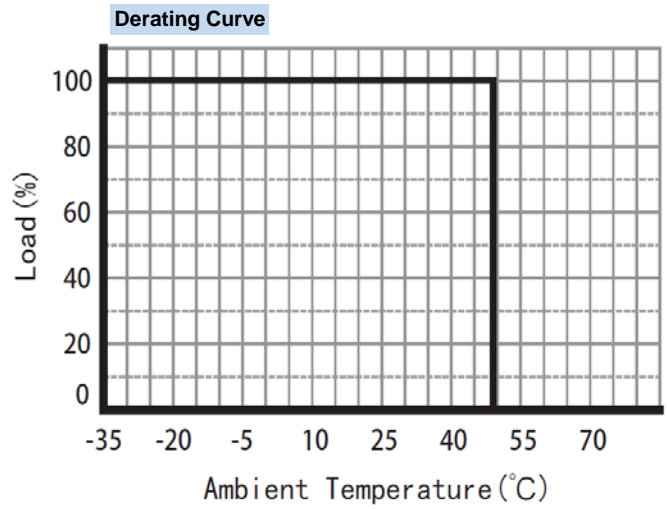
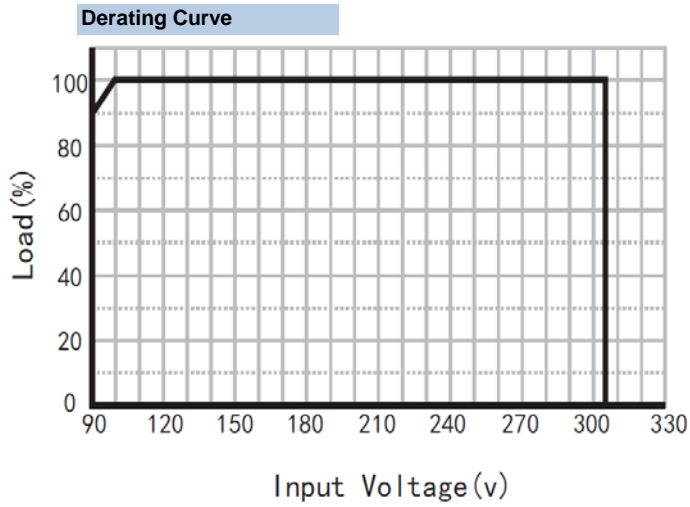
- **Features**
 - ◆ Input voltage: 90-305Vac
 - ◆ Built-in active PFC function 0.95 Typ.
 - ◆ High efficiency: up to 85% Typ.
 - ◆ Waterproof (IP20)
 - ◆ Max output 40W
 - ◆ Constant Current , support DMX/RDM Dimming
 - ◆ Output current can be set from 200~1800mA
 - ◆ Protection: OVP, SCP, OTP,OPP
 - ◆ According with UL Class2

■ Specification

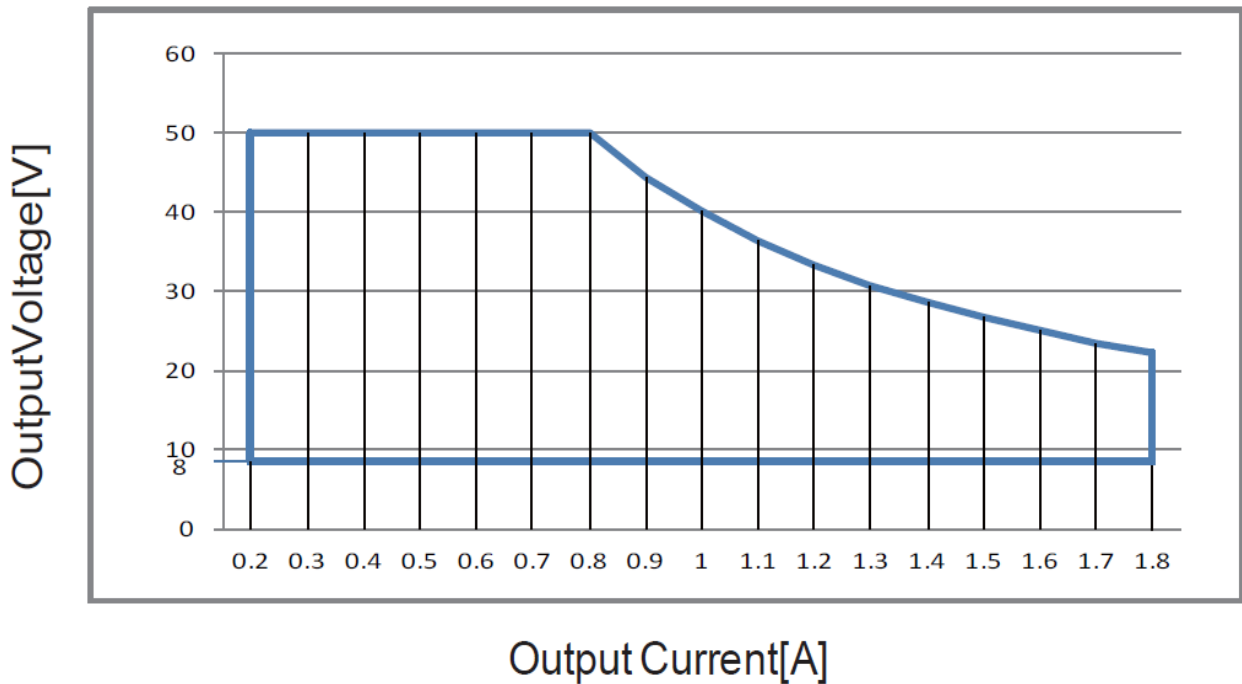
Model (MU040I180AQI51)		
Input	Efficiency(230Vac)	85% (Typical) at 50V*0.8A 100% load conditions
	Efficiency(120Vac)	85% (Typical) at 50V*0.8A 100% load conditions
	Voltage Range (Vac)	90 ~ 305
	Rated Input Voltage (Vac)	100-277
	Frequency Range (Hz)	47~63
	Power Factor	>0.9@ 100~277Vac 47~63Hz input, full load conditions
	THD	<20%@ 100~277Vac 47~63Hz input, full load conditions
	AC Current(Typ.)	0.5A MAX at 100VAC , 0.22A MAX at 230VAC
	Inrush Current(Typ.)	<10A at 100~277Vac input 25°C cold start at 100% conditions .for details see attached graph
	Input Power (W)	60(max)
	Standby power (W)	<0.3W at input 120/230Vac conditions
	Leakage Current(max.)	0.75mA at 277Vac 50Hz input
Output	Output Voltage Range (V) ^{Note.1}	8-50
	Output Current Range(mA)	200-1800
	Rated Power (W)	50(max)
	Ripple Current((Pk-AV) /AV)	20% max@ full load conditions
	Current Tolerance ^{Note.2}	±5%
	Line Regulation	±1%
	Load Regulation	±3%
	Setup, Rise Time	<1.0s measured at 100~277Vac 47~63Hz input at 80%~100% load conditions
Dimming Control	DIMMING FUNCTION	DMX Dimming / 0.1%lo~100%lo
Protection	Over voltage protection(V)	60
	Short Circuit protection	Power supply active control stop output, power supply shall be self-recovery when the fault is removed.
	Over Temperature protection	When the inside PCB exceeds 110°C , output current will be decreased to 50%. And it can not recover until the temperature
Environment	Over power protection	Total power exceeds 50W, the output current of each channel will decrease to 50%, and then increased to 50W gradually.
	Operating Temp.	-25~+50°C (Tc 72°C)
	Operating Humidity	20~95%RH, non-condensing
	Storage Temp., Humidity	-40~+85°C, 10~95%RH
Safety & EMC	Vibration	10~500Hz, 5G 12min/cycle, period for 72min each along X、Y、Z axes
	Safety Standard	UL8750, UL1310 Class 2, CAN/CSA-C22.2 No.223-M91, EN61347-1, EN61347-2-13
	Withstand Voltage	I/P-O/P:3.75KVAC I/P-FG:1.875KV O/P-FG:1.5KV
	Isolation Resistance	I/P-O/P ,I/P-FG,O/P-FG:100M Ohms/500VDC/25°C/70%RH
	EMC Emission	EN55015/FCC Part 15 Class B, EN61000-3-2 Class C, EN61000-3-3
Others	EMC Immunity	EN61000-4-2,3,4,5,6,8,11, EN61547 (Surge L,N-FG 2KV, L-N 1KV)
	Life time	>50000@Tc =72°C @ 120Vac input, full load
	MTBF	250,000 hours, measured at full load, 25°C ambient temperature MIL-HDBK-217F(25°C)
	Dimension	195x42.5 x 30 mm (LxWxH)
	Weight	360g

Note.1: refer to V/I curve
Note.2: At Rated Current ,Includes set up tolerance, line regulation and load regulation.

■ Curve

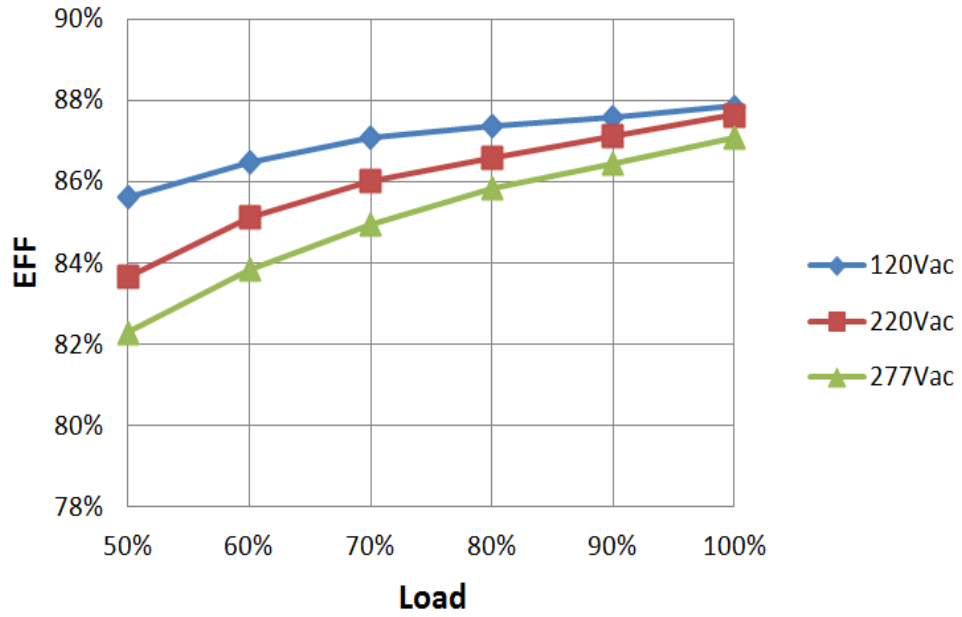


V/I Curve

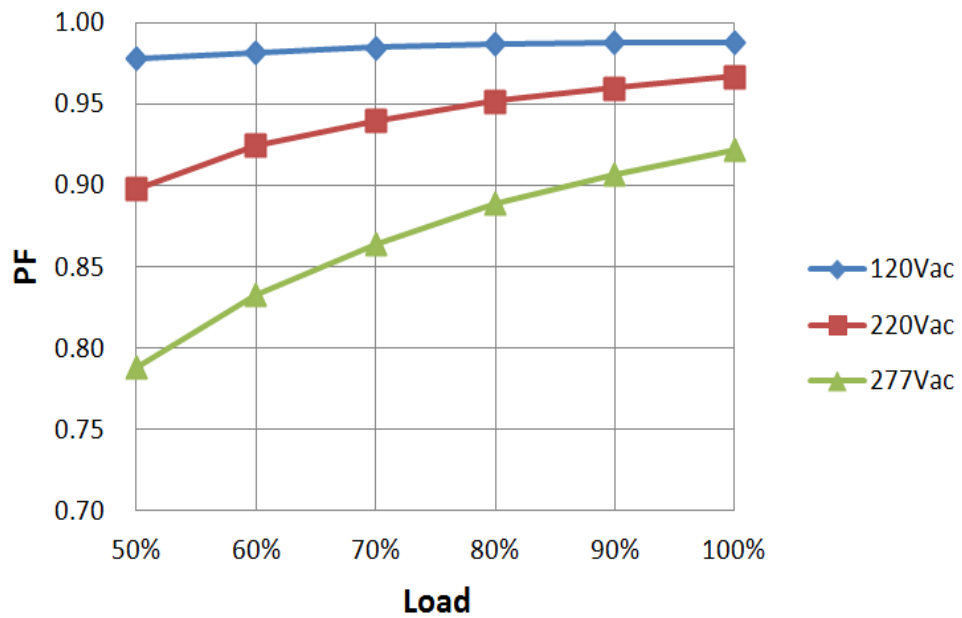


Curve

Efficiency Curve@ output 0.8A

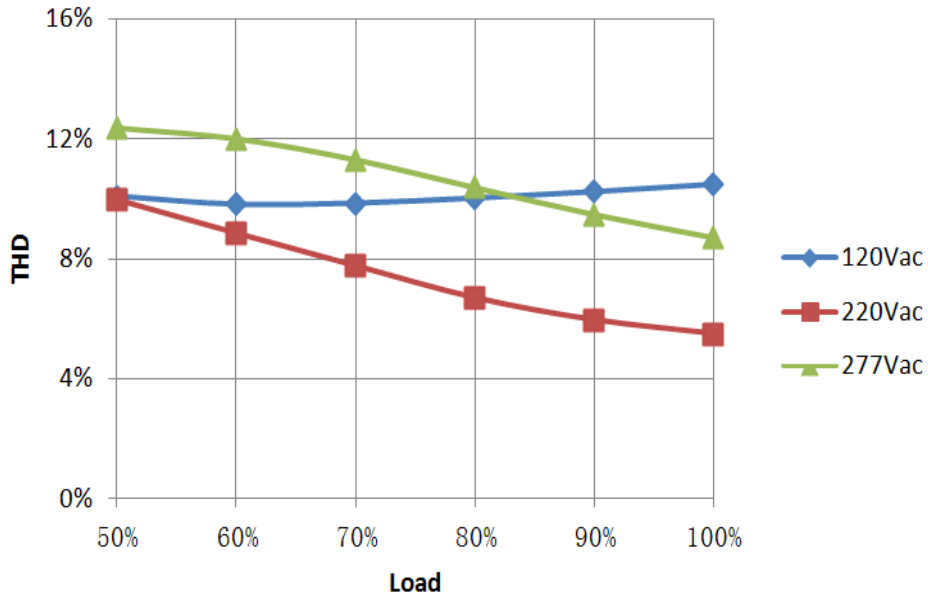


PF Curve@ output 0.8A

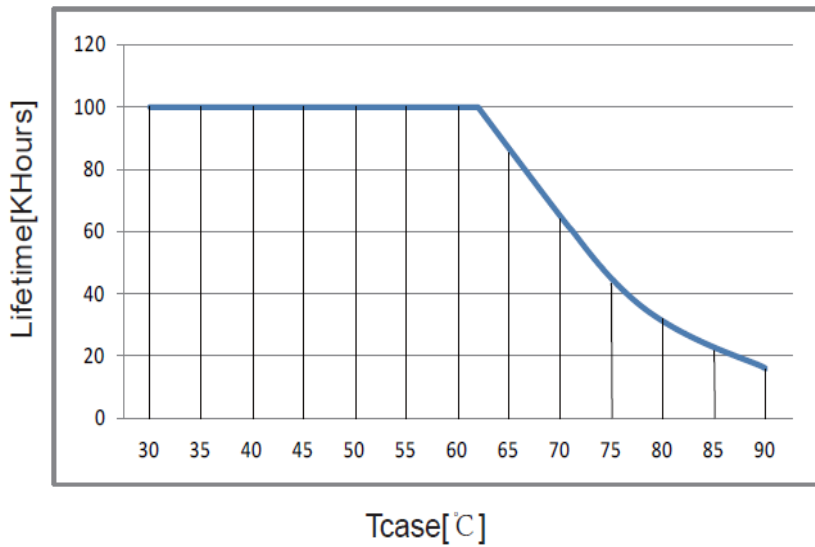


■ Curve

THD Curve @ output 0.8A

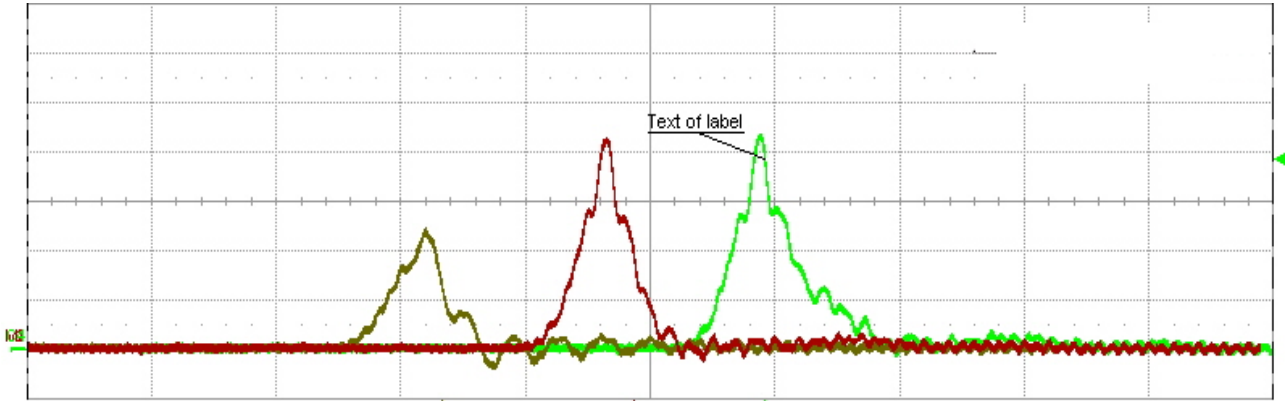


Lifetime VS. Tcase



■ Curve

Inrush current



Measure
value
status

P1:max(C4)
4.34 A

P2:---

Text of label

P3:---

P4:---

P5:---

P6:---

C4	BwL DC	M1	M2
1.00 A/div	1.00 A/div	1.00 A/div	1.00 A/div
-2.980 A ofst	100 μs/div	100 μs/div	100 μs/div

时基	92 μs	触发	C4 DC
	100 μs/div	停止	3.82 A
	1.00 MS	Edge	负

Inrush current information

Input voltage	Ipeak	Time@50% of Ipeak
120VAC	2.45A	40us
220VAC	4.21A	40us
277VAC	4.34A	40us

Max number of drivers per MCB

Item	Max. number of drivers		
	120	220	277
Input voltage [VAC]	120	220	277
MCB B type 10A	20	36	47
MCB B type 13A	26	47	61
MCB B type 16A	32	58	75
MCB B type 20A	40	72	94
MCB B type 25A	50	90	117

■ **Application of introduction**

1. DMX/RDM

DMX in +、DMX in -、Shield ; DMX out +、DMX out -、Shield are the interfaces of DMX/RDM, support daisy-chain **autoaddress funtic**

● Dimmer compatability list:

Dimmer compatability list	Dimmer Manufacturer	Dimmer Model NO.
	Swisson	Swisson XMT-350
	GODDARD DESIGN	Dmxt4 RDM
	ADJ products	ADJ RGB4WIR controller
	Traxon Technologies	Butler S2

2. MCS technology

Connect Smartkey to the driver through MCS(Multifunctional Configuration Settings) ports. With MOONS' Configurator software, you can set the MAX current of the driver(each step is 1 mA),dimming curve type, DMX start address, scene modes etc.Please refer to specification of Smartkey to get specific information.

3. Temperature Detection

In order to protect the LED, the temperature of LED is detected by a NTC①. When the temperature exceeds the point which can be set by Smartkey, the output current can be decreased automatically, but not less than 25%.

4. Online Update

Connect Smartkey to PC through a USB port, then connect Smartkey to the driver correctly to update. Please refer to the specification of Smartkey.

①Recommended manufacture and type of the NTC

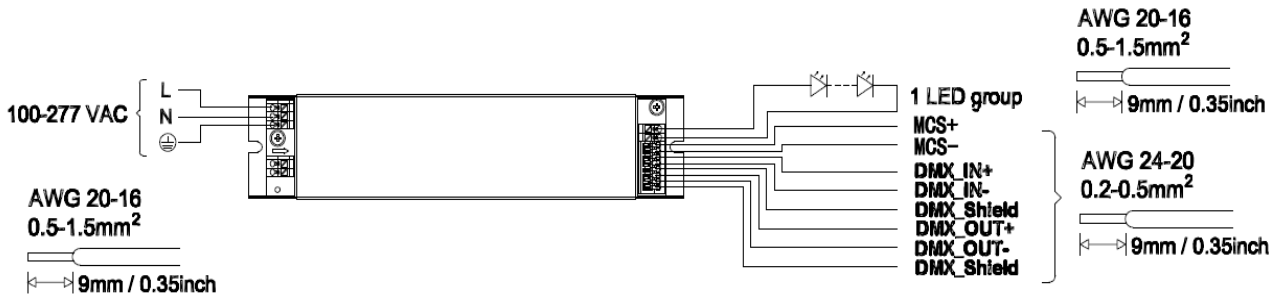
Manufacture	model
MURATA	NCP21WB473J03RA(SMD)
Vishay	NTCS0805e4473JXT(SMD)
Vishay	238164063473 (DIP)
Thinking	TSM2A473J409ARZA(SMD)

■ **Smartkey and smartkey software**

Use smartkey and smartkey software can configure the maximum current, dimming curve, NTC thermal management, online update. Please refer to smartkey user manual, the download address:

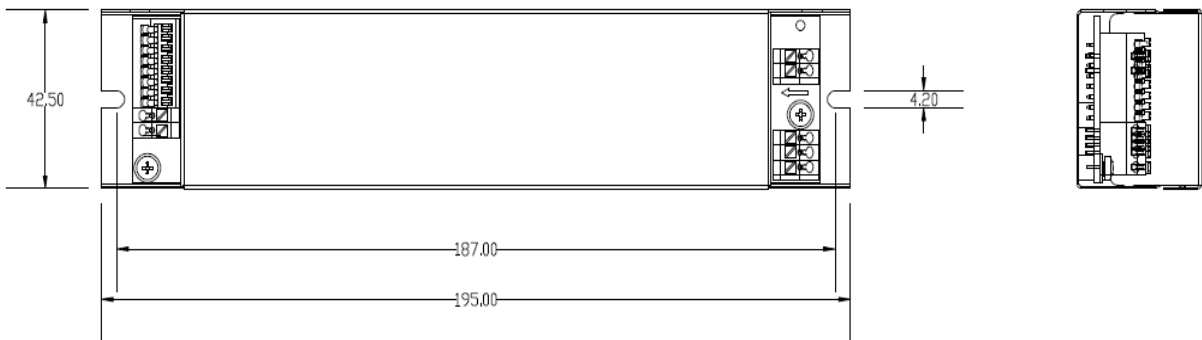
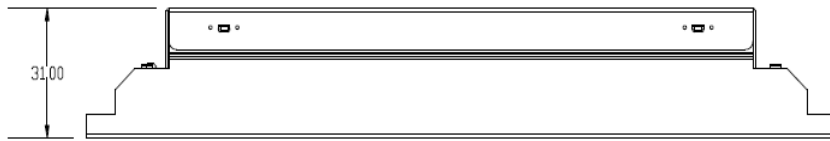
https://leddriver.moons.com.cn/SouProduct/UCenter/M_Search/Software_view.aspx?MATNR=SmartkeySoftware&rnd=928

■ Port



■ Mechanical Specification

Dimensions(Unit:mm)



RoHS Compliance:

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