

Технологии MOONS' для умного освещения

Декабрь 2018

MOONS'
moving in better ways



Текущая фабрика в Шанхае. Переезд на новую территорию по площади в 2 раза большую запланирован на январь-февраль 2019 года.

Приезжайте в гости, чтобы своими глазами увидеть, как роботы собирают шаговые двигатели на которых они построены.



Milestones



Особенность MOONS'

Компания получила огромный опыт в создании сервоприводов и шаговых двигателей – технически существенно более сложных устройств, чем источники питания.

MOONS' покорила рынок Америки, создав предприятие на её территории для этого рынка (linengineering.com).

Поиск новых направлений, где можно реализовать потенциал инженерии, привёл компанию на рынок светодиодных источников тока и систем управления светом.



youtu.be/-eVMnpTlwCk - видеопрезентация компании MOONS'

Продуктовая линейка MOONS':

Сервоприводы и шаговые двигатели, ~ 35% бизнеса

Motor

- Stepper Motor (HB/PM)
- Servo Motor
- Brushless DC Motor



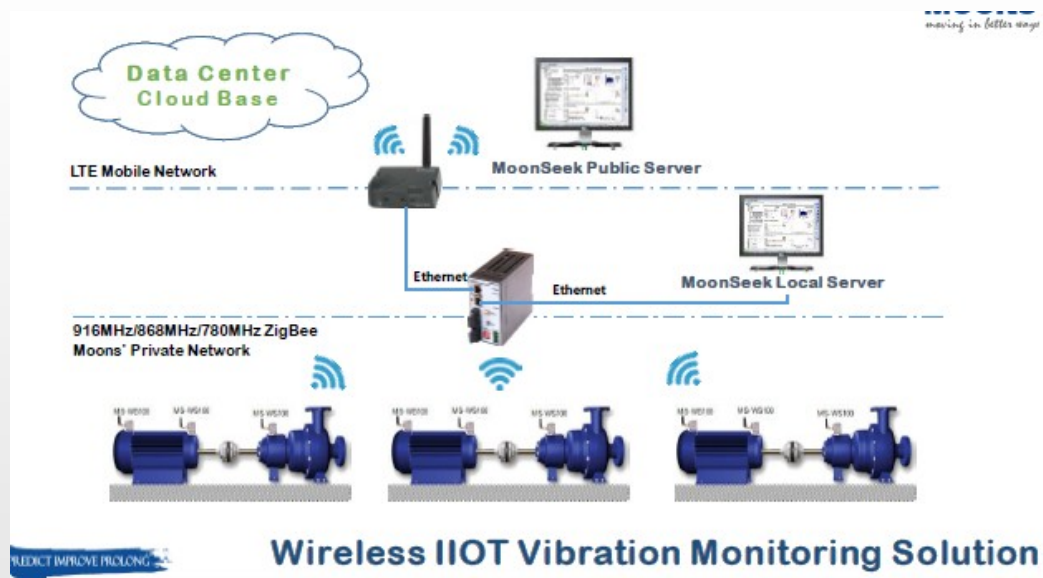
Motor Drives

- Step Drives
- Servo System
- BLDC Drives



Продуктовая линейка MOONS':

Системы мониторинга оборудования (вибродиагностика – в том числе и IIoT на ZigBee) на промышленных предприятиях, ~5% бизнеса



Продуктовая линейка MOONS':

Источники тока для светодиодных светильников и системы управления освещением,
~60% бизнеса



Этой теме и посвящена вся презентация

Основные заказчики MOONS'

North America



Europe



Japan



China



MOONS'
moving in better ways



Facility-LED Driver & Control'



A/I Line



SMT Line



Wave Soldering



Safety Compliance Test



ATE Test



Bar-code System



Automatic potting equipment



Monitor of Power supply burn in



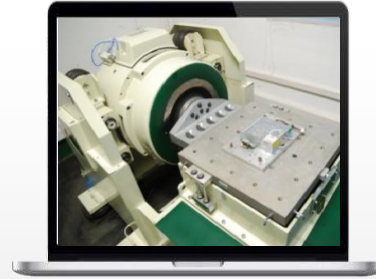
Laboratory



Precision Measurement
(OGP, CMM)



Environment & Reliability



Vibration Test



EMC Test



Drop Test



RoHS Test



Thermal shock
chamber



High accelerated life
test chamber



10KV Surge
generator

Customer Service



Headquarters
Shanghai, P.R. China

MOONS' Industries America
Chicago, U.S.A

MOONS' Industries Europe
Milan, Italy

MOONS' Industries East-Asia
Singapore

MOONS' Industries Japan
Yokohama

Office in China
Shenzhen Office

Beijing Office

Nanjing Office

Qingdao Office

Wuhan Office

Chengdu Office

Xi'an Office

Ningbo Office

Guangzhou Office

MOONS' Intelligent Driver

MOONS' High Performance In The LED Lighting

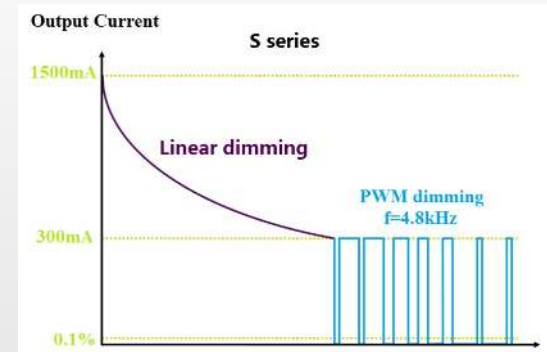
Intelligent Drivers in Smart Lighting

- Deep dimming & High resolution
- Digital dimming with intelligent system (Dali, DMX)
- Normal drivers with On/Off function
- Open-loop control drivers (Clock dimming, CLO, CP)
- Control System (NEMA wireless)

MOONS' Intelligent Driver Introduction



- Dimming Performance: Full Range (100%→0.1%) & dim-off, Flicker Free, Linear/Gamma corrected Curve, 16 bits Resolution
- Mechanical Construct: Back-feed, Side-feed, Compact, Slim
- Dimming Method: 0-10V, DALI, Push Dimming, DMX/RDM
- Applications: Stage, Landscape Lighting, Architecture, Agriculture Lighting
- MCS interface for NTC connection and programming
- Safety: UL/CUL,CE
- Input: 90~305Vac
- S Series: Output: 8~55VDC, 150~1500mA (50W 1,2chs);
- I Series: Output: 8~50VDC, 200~1800mA (30/40W), 200~1500mA (50W 1,2chs), 200~1050mA (50W 4chs), 200~2100mA (96W)



I Series 0-10V Driver



Side-feed, Back-feed



Compact



Slim

- Input: 90~305Vac
- I Series: Output: 8~50VDC, 200~1800mA(30/40W), 200~1500mA(50W 1,2chs),
- Mechanical Construct: Back-feed, Side-feed, Compact, Slim
- Dimming Method: 0-10V, Dim to off
- MCS interface for sensor connection
- Safety: UL/CUL,CE
- Applications: Stage, landscape lighting, Architecture, Agriculture Lighting
- Dimming Performance: Full Range(100%→0.1%)&dim-off, Flicker Free, Linear/Gamma corrected Curve,16 bits Resolution

What's New on S Series 0-10V Driver?

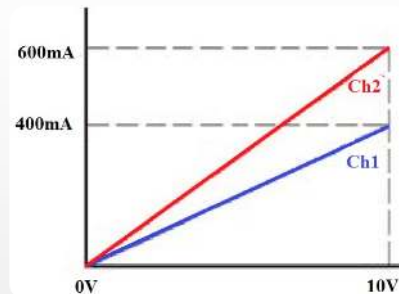
- Widen Output Voltage: 8~50VDC→8~55VDC
- Widen Output Current: 150-1500mA (30/50W 2chs); 150-1050mA(50/96W 4chs); 300-3000mA(96W 2chs)
- 4 dimming strategies in one driver: Tunable White, Dim to Warm, Solo Dimming, Dual Dimming



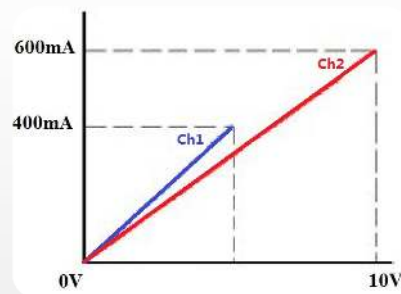
Tunable White



Dim to Warm



Solo Dimming



Dual Dimming

- Tunable White: Change fixture's color temperature and intensity via two 0-10V dimming signal respectively.
- Dim to Warm: Dimming like incandescent light bulb, change fixture's color temperature when dimmed via one 0-10V dimming signal.
- Solo Dimming: Dim two fixtures' intensity via one 2chs driver and one 0-10V dimming signal simultaneously.
- Dual Dimming: Dim two fixtures' intensity via one 2chs driver and two 0-10V dimming signals respectively.

I Series DALI Driver



Side-feed, Back-feed



Compact



Slim

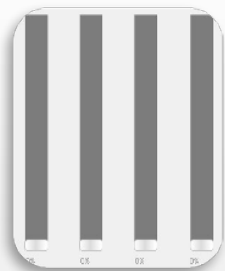


Back-feed (96W)

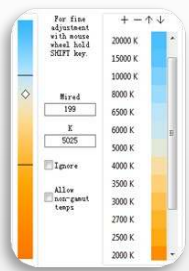
- Input: 90~305Vac
- I Series: Output: 8~50VDC, 200~1800mA(30/40/50 W 1ch), 200~1500mA(50W 2chs), 200~1050mA(50W 4chs), 200~2100mA(96W 1ch)
- Mechanical Construct: Back-feed, Side-feed, Compact, Slim
- Dimming Method: DALI DT6, DT8 (50W 2chs/4chs)
- MCS interface for NTC connection and programming
- Safety: UL/CUL,CE
- Applications: Stage, landscape lighting, Architecture, Agriculture Lighting
- Dimming Performance: Full Range(100%→0.1%)&dim-off, Flicker Free, Linear/Gamma corrected Curve,16 bits Resolution

What's New on S Series DALI Driver?

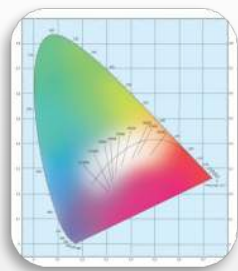
- Widen Output Voltage and Current: 8~50VDC→8~55VDC 150-1500mA (50W 2chs); 150-1050mA(50 4chs in future)
- NFC programmable
- Complete full DALI2 (DT8 functions): using one address to achieve Primary N, Color temperature Tc, xy-coordinate, RGBWAF
- 4 dimming strategies in one S Series DT8 4chs driver: Primary N, Color temperature Tc, xy-coordinate, RGBWAF
- 2 dimming strategies in one S Series DT8 2chs driver: Primary N, Color temperature Tc



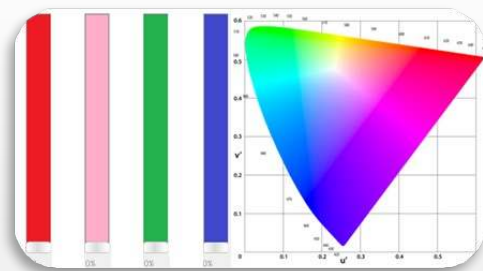
Primary N



Color temperature Tc



XY-coordinate



RGBWAF

- Primary N: Using 1 address to dim each channel's intensity respectively.
- Color temperature Tc: Using 1 address to achieve tunable white application.
- xy-coordinate: Using 1 address to achieve color changing according to coordinate on the CIE color space chromaticity diagram.
- RGBWAF: Using 1 address to define each channel's color to meet customized CIE color space chromaticity diagram.

DMX Driver

- DMX/RDM function
- Output Channel: 1/2/4 channel
- Dimming Performance: Full Range (100%→0.1%)&dim-off, Flicker Free, Linear/Gamma corrected Curve, 16 bits Resolution



AC/DC
1/2/4 Channel



DC/DC
4 channels

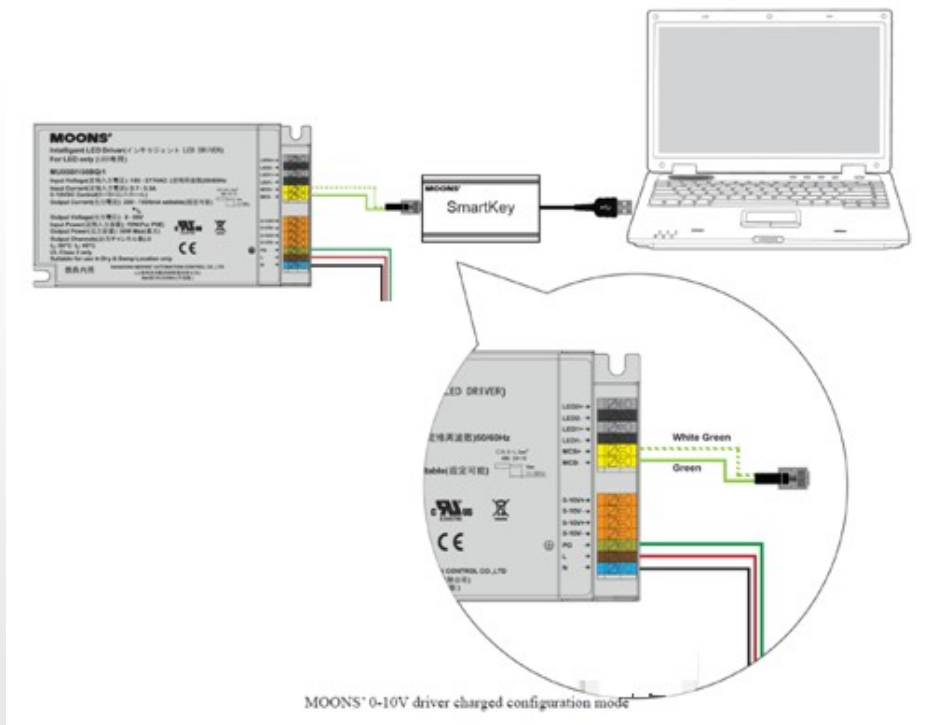


Niagara Falls

Intelligent, Programmable LED Drivers

How to Program (with Cable)

- A. Install the Smart Key software into the PC
- B. Install the USB driver into the PC
- C. Connect the PC & Smart Key & MOONS' intelligent drivers
- D. Program the drivers with different function. (0-10V / Dali / DMX)
- E. Don't need power-up the driver
- F. For engineers only, production programming tools available
- Demonstration



Intelligent, Programmable LED Drivers

How to Program (with NFC)

- A. Install the MOONS' Touch Setting Software;
- B. Install the USB driver into the PC.
- C. Connect the PC & NFC reader
- D. Use NFC reader to touch S series driver
- E. Program the drivers with different function. (0-10V / Dali / DMX)
- F. Don't need power-up the driver.



MOONS' Outdoor and Industrial LED driver

Constant power series



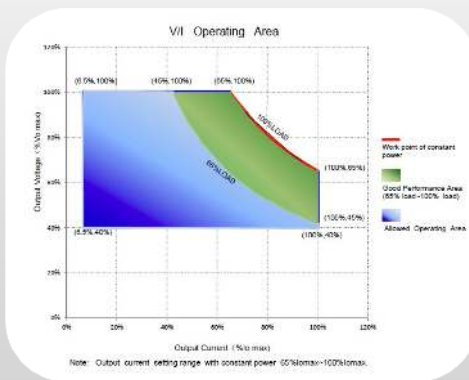
Street Lighting



Area Lighting



Industrial Lighting



Plant Lighting

Constant power series

- 0-10V(PWM)/clock dimming/CLO
- Programmable output current
- Flexible current setting with a wide window
- Applications: Street Lighting , Tunnel Lighting, Industrial lighting, Area Lighting



ME series - популярная в России и Европе. Световая пульсация <5%

- Input Voltage range:140-305Vac
- 75W/100W/150W/200W/250W
- High surge level : 10kV/10kV



MU series – популярная в Америке

- Input Voltage range:90-305Vac
- 75W/100W/150W/240W/320W
- High surge level :
75W/100W/150W 6kV/6kV
240w/320W 4kV/6kV



MT series

- Input Voltage range:277-480Vac
- 50W/100W/150W/240W/320W
- High surge level : 4kV/6kV

Outdoor LED driver

H Series 150W/200W (Class II)

Применяются в России на улице, где
«старые линии питания и боятся заземлять»

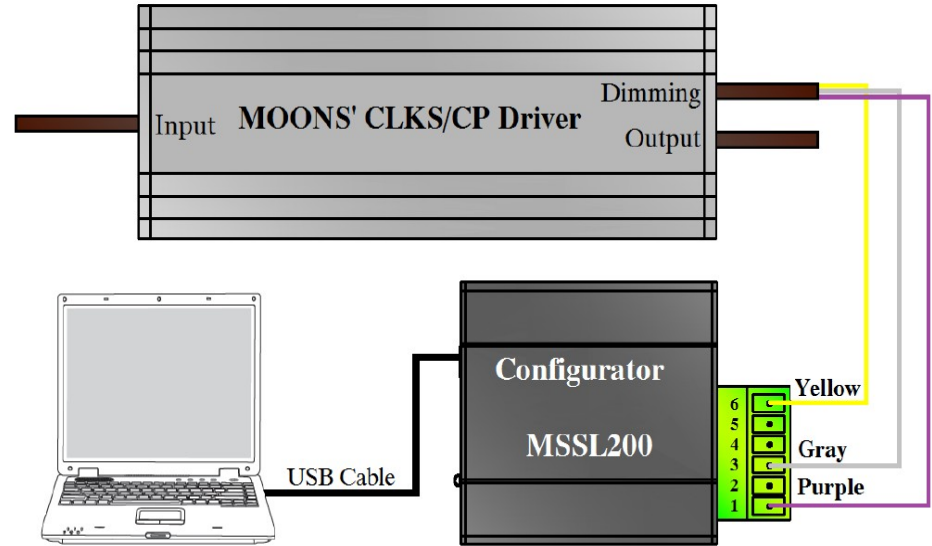


- Input voltage range 90-305Vac (rated 100-240Vac for ENEC)
- High efficiency low THD high surge level
- Output: 150W/200W series
- Constant current 0-10V(PWM) dimming CLK(S) function
- Suitable for luminaire protection class I/II
- Applications: Street Lighting, Tunnel Lighting, Industrial lighting, Area lighting

Open-loop control drivers

How to Program (steps)

- A. Install the configurator software into the PC
- B. Install the USB driver into the PC.
- C. Connect the PC & configurator & MOONS' CLKS or CP drivers.
- D. Program the drivers with different function.
- E. Don't need power-up the driver.
- F. For engineers only, production programming tools available.
- Demonstration



The hardware connection of configuring MOONS' CLKS/W or CP/W driver

Outdoor LED driver

35W Metal case (ME035A)

Дешёвый ИП построен по однокаскадной схеме, световая пульсация 30%

- Input voltage range 176-305Vac
- High efficiency low THD High PF
- High surge level:6kV/6kV
- Constant current 0-10V(PWM) dimming CLKS function
- Output: 35W series
- Suitable for luminaire protection class I
- Applications: Street Lighting, Tunnel Lighting, Industrial lighting

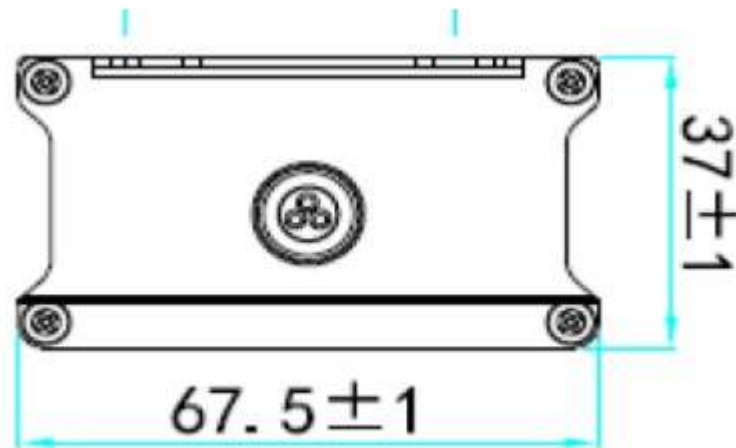


Outdoor LED driver low cost

75-200W Metal case без программирования

ультрадешёвые ИП для российского рынка на замену Аргоса с уменьшенным по высоте габаритом источника тока на стандартные токи 700 и 1400 мА

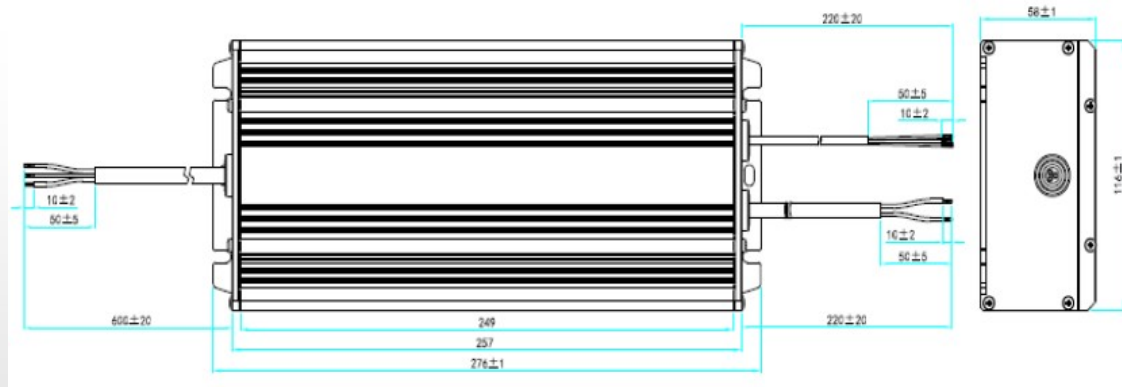
- Input voltage range 140-305Vac
- Работа от -60град
- High surge level:4kV/10kV
- Изоляция 3.75kV
- Constant current
- Suitable for luminaire protection class I



Outdoor LED driver 600W

600W Metal case MU600H420AQ_CP_AUX

с программированием
для мощных прожекторов
(освещение больших территорий)



- Input voltage range 90-305Vac
- High surge level:4kV/6kV
- Изоляция 3.75kV
- Constant current
- Suitable for luminaire protection class I

MOONS' Industrial LED driver

Outdoor LED driver

H Series (Class II)

световая пульсация ~ 30%



- Input voltage range 90-305Vac
- Compliance to worldwide safety regulations for lighting
- Output: 12W/25W/40W
- Suitable for Dry & Damp Locations(C-UL)
- Suitable for luminaire protection class II
- Applications: Architecture, Street Lights, Garden Lights

High-bay LED driver

Round Shape Constant power series

- Input Voltage: 90-305Vac
- 160W/260W Series
- High surge level : 4kV/6kV
- Dimming function : 0-10V /PWM/Clock/CLO/ DALI
- Auxiliary Output Power
- Dim to off (option)
- Flexible current setting with a wide window
- Long life time 50khrs@Tc=85
- Certification: CUL/CE
- Applications: Industrial lighting



High-bay LED driver

MU075M/096M Slim series

- Input Voltage range:90-305Vac
- 75W:27-54VDC/1.4A
- 96W:24-48VDC/2A
- High surge level : 4kV/6kV
- Dimming function : 0-10V/PWM/Clock dimming/CLO
- Programmable output current
- Certification: CUL/CE
- Applications: Industrial lighting



75W/96W

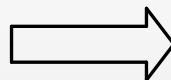


High-bay

High-bay LED driver low cost

NEW!

P-series (30-100W) for linear luminaires

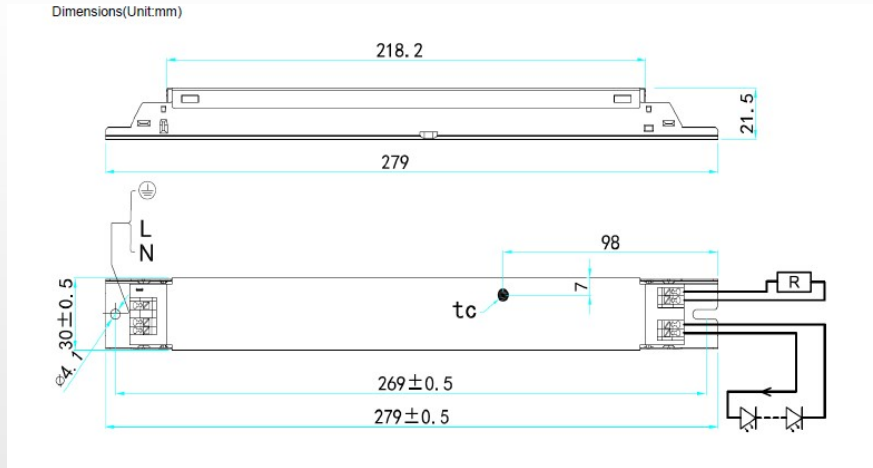


High-bay

В металлическом корпусе, с частичной заливкой компаундом и с гальванической изоляцией 3 кВ!

High-bay LED driver ultra low cost

NEW!
150W ME150N070AQ



High-bay

В металлическом корпусе, без гальванической развязки!

MOONS' Product Center Website

The screenshot shows the MOONS' LED Drivers website interface. The page title is "LED Drivers" and the URL is "https://leddriver.moons.com.cn/SouProduct/UCenter/M_Search". The page features a search filter section with the following options:

- Series: General Driver-Indoor Use, General Driver-Outdoor Use, Intelligent Driver
- Driver Type: Constant Voltage, Constant Current
- Output Power: 0W-12W, 12W-25W, 25W-40W, 40W-50W, 50W-75W, 75W-100W, 100W-150W, 150W-200W, 200W-250W, >250W
- Input Voltage: 90-132VAC, 90-264VAC, 90-305VAC, 176-284VAC, 176-305VAC, 277-480VAC
- Dimming Mode: 0-10V, Programmable, Non-Dimming, RS485, DALI, DMX, 0-10V Dim to off, PWM

Below the filters, there is a table with 46 pages and 907 rows of search results. The table columns are: Part Number, Size (mm), Dimming Mode, Input Voltage, Surge Level, Output Power (W), Vout (V), Iout (mA), Number of Outputs, Case, and Compliance. Three product entries are visible in the table:

Part Number	Size (mm)	Dimming Mode	Input Voltage	Surge Level	Output Power (W)	Vout (V)	Iout (mA)	Number of Outputs	Case	Compliance
ME10M105AQ_CF General Driver-Outdoor Use Constant Current	L: 173.0 F: 67.5 H: 37.0	Programmable (Constant Power)	176-305VAC	L-N:10KV L/N-FG:10KV	75.0	49-108	1050 (74-1050)	1	Metal IP67	CCC, CE
ME10M105AQ_CF General Driver-Outdoor Use Constant Current	L: 179.0 F: 67.5 H: 40.0	Programmable (Constant Power)	176-305VAC	L-N:10KV L/N-FG:10KV	100.0	57-145	1050 (74-1050)	1	Metal IP67	CCC, CE
ME150M105AQ_CF General Driver-Outdoor Use Constant Current	L: 202.0 F: 67.5 H: 40.0	Programmable (Constant Power)	176-305VAC	L-N:10KV L/N-FG:10KV	150.0	88-214	1050 (74-1050)	1	Metal IP67	CCC, CE

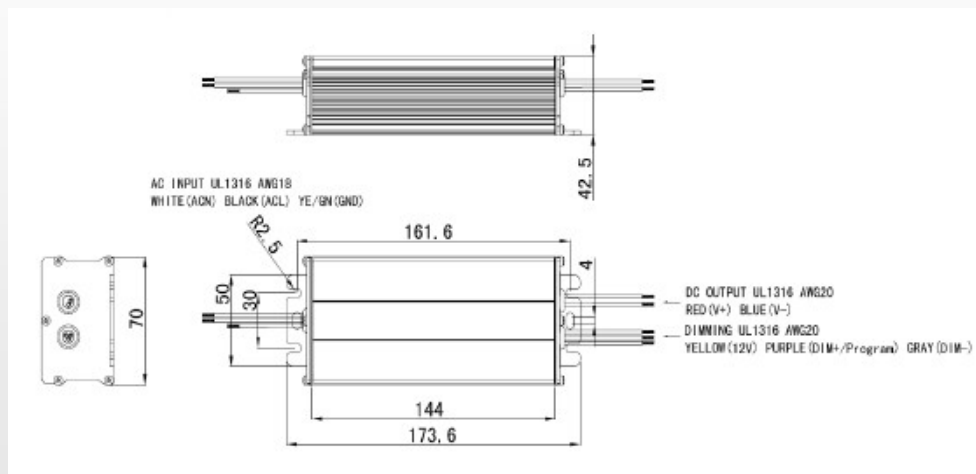
https://leddriver.moons.com.cn/SouProduct/UCenter/M_Search/ZKDY.aspx

MOONS' explosion proof LED driver

NEW explosion proof

Светодиодные драйверы для взрывобезопасных светильников имеют префикс в окончании MB.
Сейчас разрабатываются 2 модели 60 и 100 Вт. В июле 2019 года компания MOONS' планирует провести их сертификацию: IECX and ATEX Zone 1.

На текущий момент их заказчик провёл сертификацию источников тока на 50-10-150 Вт под собственным брендом.



MOONS' Lighting Control System

Intelligent Lighting Control System

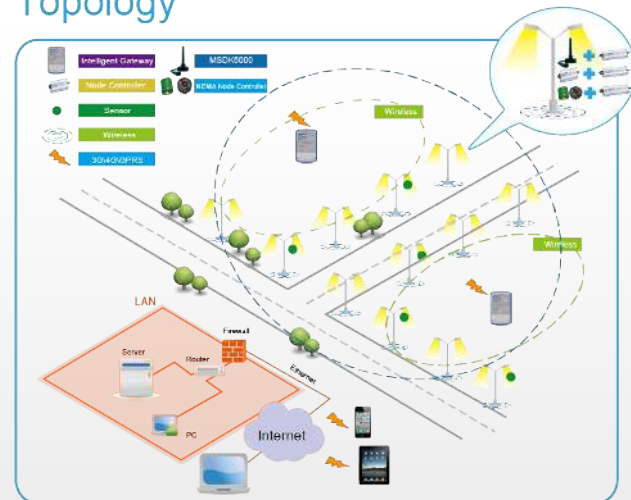
MOONS' Wireless lighting system is suitable for the Smart City solution

2.4GHz-IEEE802.15.4 ~ ZigBee

Множество реализованных проектов на территории Китая и Европы.
Один из последних крупнейших – освещение в Израиле.



Topology



<http://www.lumen2b.ru/besprovodnoe-upravlenie-osveshcheniem-na-zigbee-ot-moons/>

Intelligent Lighting Control System

MOONS' NB-IoT

2018 год – совместно с корпорацией HUAWEI реализовано 6 пилотных проектов на территории Китая по 100-400 светильников .

Получен результат – самое долгое это менее 1,5 минуты задержки между включением первым и последним светильниками.

2019 год – запланирован проект на 10 000 светильников для проверки работы системы на большее число светоточек.



Благодарим за уделённое внимание

Подробную информацию по продукции MOONS' и готовых решениях
Вы можете получить в компании «Планар-СПб»

+7 (812) 329 44 61 • planar.spb.ru • import@planar.spb.ru