



Apricum[®] SM

STREETLIGHTS

Housing Colors:



Grey Black White Blue



Benefits

- High energy savings
- Good colour rendering, making it easier for users to orientate themselves
- Long life - up to 50,000 hours, resulting in less maintenance
- Uniform, high quality light
- Excellent energy-efficient performance
- Good opportunities to dim light when it is not needed
- Replaces all traditional light sources for road traffic routes
- Highly efficient lighting platform without no compromising to cover all applications
- Full flexibility to cover all applications
- Highly aesthetic design and state-of-the-art functionality
- Reduction in CO₂ emission
- Can provide high energy savings without dimming or switching off during the night
- A light source that can be used anywhere, from footpaths to motorways

Description

DuLight is proud to offer our new LED Streetlight Apricum SM that is environmental friendly, energy-saving with high specifications that compete with European Standard Products. It's perfect for our roads and streets which are a vital part of the country's infrastructure, essential to support economic activity and people's movements. Our innovative outdoor lighting solutions address the environmental concerns and the increasing cost pressures on the project budget.

Applications



Urban Roads



Public Area Lighting

INVENTRONICS

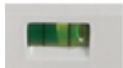
MOSO[®]

PHILIPS
LUMILEDS

Product Features

- High lumen LUMILED's LUXEON LED modules
- INVENTRONICS and MOSO LED driver
- Die-cast latches provide easy, tool-less access to the electrical compartment
- Luminaire uses UV protected PC diffuser with transmittance rate of 97%
- Suitable for horizontal and vertical installation with adaptor adjustable by $\pm 15^\circ$
- IP68 LED modules with screw free design to avoid water penetration
- Equipped with 10kv surge protection device
- IP66 rated engine compartment sealed with tempered glass
- Ergonomic and dedicated lighting distributions are available for various roadway applications.
- Optional NEMA receptacle and photocell / shorting cap.
- Working temperature: -40°C to 55°C
- Life-span: 50,000 hours

Design Features



Bubble level

For easy leveling during installation

NEMA receptacle & photocell (optional)

Electrical disconnecter (optional)

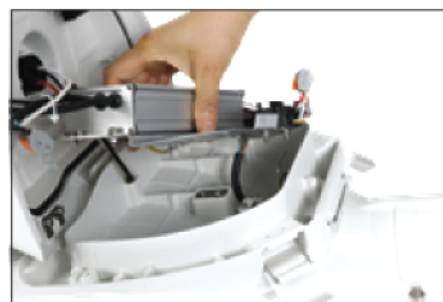
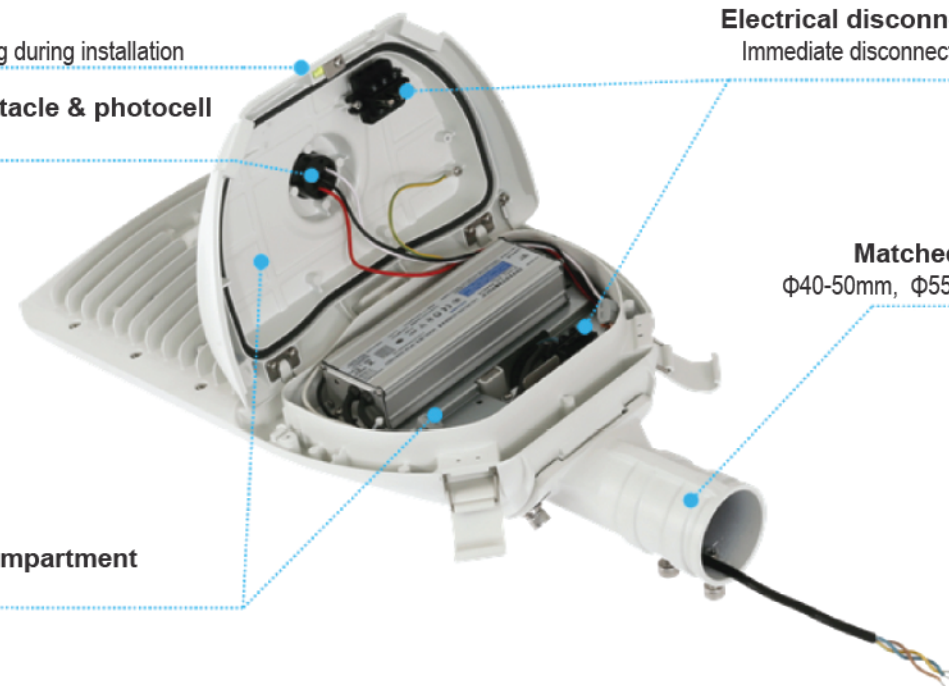
Immediate disconnection of power supply

Matched pole diameter

$\Phi 40\text{-}50\text{mm}$, $\Phi 55\text{-}65\text{mm}$, $\Phi 66\text{-}76\text{mm}$

Electrical compartment

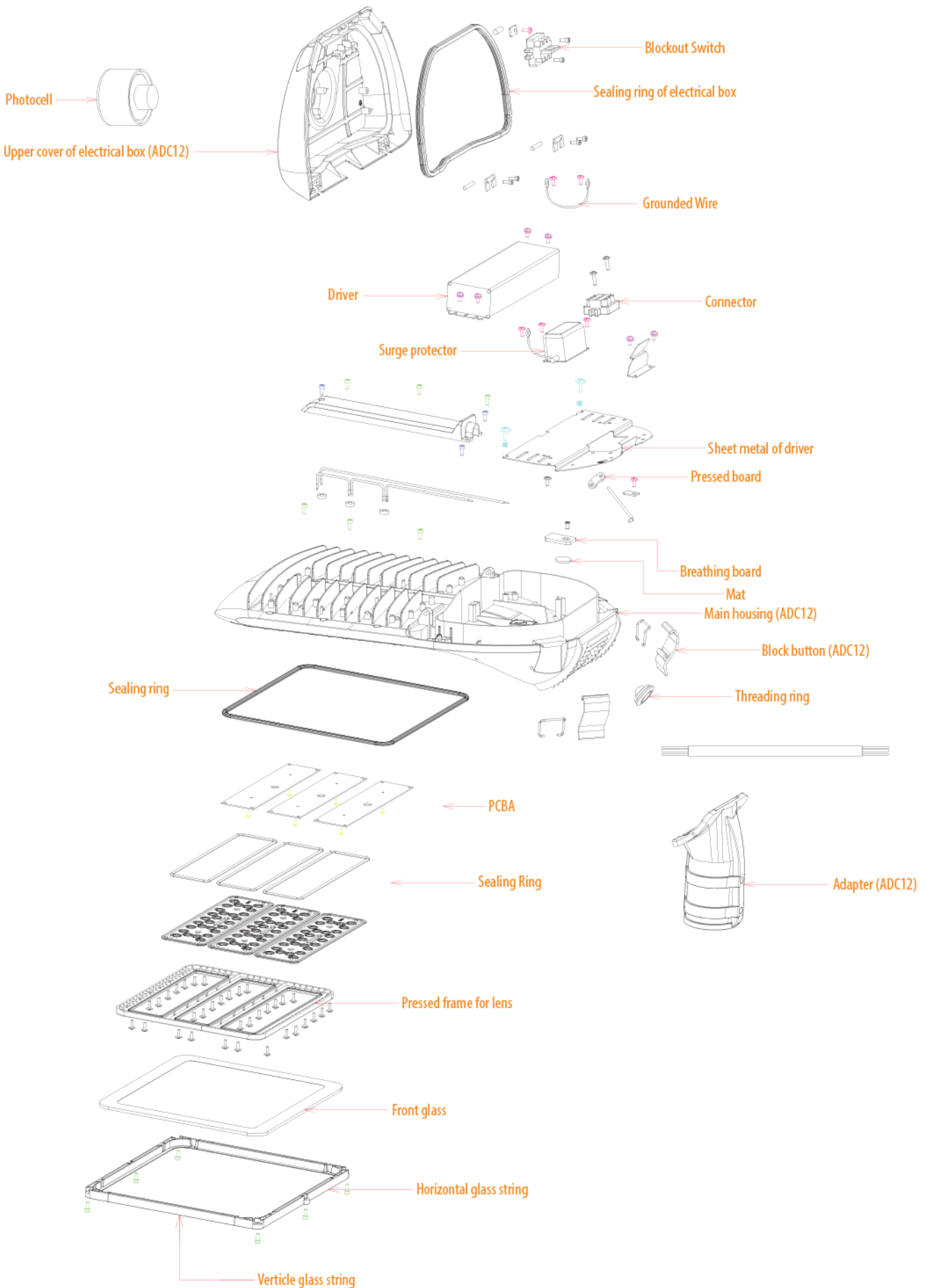
IP66 rated



Removable Mounting Plate of Driver

Optional

Parts Specifications



Aluminum Die Casting Metals

Aluminum Die Casting Metals (ADC12 or 383) is used to make the main body, electrical box, adapter, block buttons and clips of the Street Light. Aluminum castings are lightweight and able to withstand the highest operating temperatures of all die cast alloys.

Aluminum Alloy Characteristics

- High operating temperatures
- Outstanding corrosion resistance
- Lightweight
- Very good strength and hardness of Street Light backside on a side
- Good stiffness and strength-to-weight ratio just for pictorial representation
- Excellent EMI and RFI shielding properties
- Excellent thermal conductivity
- High electrical conductivity
- Good finishing characteristics
- Full recyclability



Mechanical Properties

Material	Alloy	Elongation	Tensile Strength	Yield Strength (0.2%)	Impact Strength	Hardness	Process
		% in 50mm	MPa	MPa	J	Brinell (HB)	
Aluminum Die Casting Metals	Aluminum Alloy 383 (ADC12)	3.5	310	150	4	75	*Cold Chamber Die Casting

*Cold chamber die casting is ideal for metals with high melting points and corrosive properties, like aluminum

Physical Properties

Material	Alloy	Density	Melting Point (Average +/- 50)	Thermal Conductivity	Coefficient of Thermal Expansion	Electrical Conductivity	Process
		g/cm ³	°C	W/mk	µm/m°K	%IACS	
Aluminum Die Casting Metals	Aluminum Alloy 383 (ADC12)	2.74	549	96	21.1	23.0	*Cold Chamber Die Casting

*Cold chamber die casting is ideal for metals with high melting points and corrosive properties, like aluminum

Composition

Aluminum Die Casting Metals	
%	Aluminum Alloy 383 (ADC12)
Aluminum	Bal.
Copper	2.0 - 3.0
Magnesium	0.1
Iron (Max)	1.3
Tin (Max)	0.15
Nickel (Max)	0.3
Zinc	3.0
Manganese	0.5
Silicon	9.5-11.5
Other-Metallic	0.5
RoHS Compliant	✓

Tempered Front Glass with IK09 rated

DuLight Apicum SM Street Light's front glass comes with tempered glass of IK 09 protection. The front glass is made of thickness 5mm especially for middle east climatic condition. The rest of the details is mentioned below:

Tempered glass is a type of safety glass that is processed by controlled thermal or chemical treatment. Its strength is increased and this makes it gain a number of benefits and uses, especially its durability as compared with the normal glass. The tempered glass is about four times stronger compared to other types of glass. Furthermore, tempered glass doesn't shatter into pieces if it happens to be broken but instead, it fractures into small relatively harmless pieces. This is basically the major reason the tempered glass is seen as the best when it comes to environments where human safety is a concern.



Benefits of Tempered Glass

- High safety
- Design feature mentioned
- Good strength
- Heat resistance
- Quality
- Durability

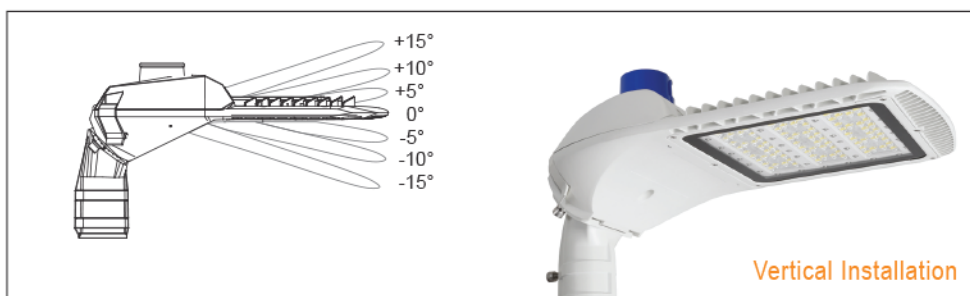
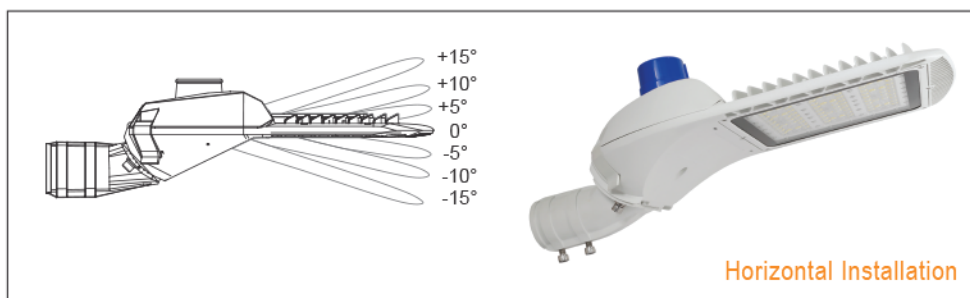
Impact Protection

IK ratings are an international numeric classification to indicate the degrees of protection provided by enclosures for electrical equipment against external mechanical impacts. It provides a means of specifying the capacity of an enclosure to protect its contents from external impacts in accordance with IEC 62262:2002 and IEC 60068-2-75:1997.

IK09 - Protected against 10 joules of impact (the equivalent to the impact of a 5kg mass dropped from 200mm above the impacted surface)

Mounting Adapter

Specially designed mounting adapter is used for Vertical and horizontal Installation, adjustable by an angle of ± 5 degree.



Philips LUMILEDS LED chips

LUXEON 3030 2D

High flux, hot-color targeted 6V package



Features and Benefits

- Industry standard package enables drop-in replacement for existing 3030 packages
- 1/9th micro-color binning enables tight color control
- Superior luminous flux at max current for reduced LED count
- Hot-color targeting ensures that color is within ANSI bin at typical application conditions, 85°C
- Enables 3-, 4-, 5- step MacAdam ellipse kits

LUXEON 3030 2D is the first hot-color targeted mid power LED. Hot-color targeting ensures that the LED's are within color target at application conditions - 85°C. Using an industry standard packaging of 3 x 3 x 0.5mm and 6V surface-mount emitter solution, LUXEON 3030 2D comes in all ANSI CCT's and delivers the efficacy and reliability required for indoor illumination markets.

Electrical and Thermal Characteristics

Electrical and thermal characteristics for LUXEON 3030 2D at 120mA, T_j=25°C.

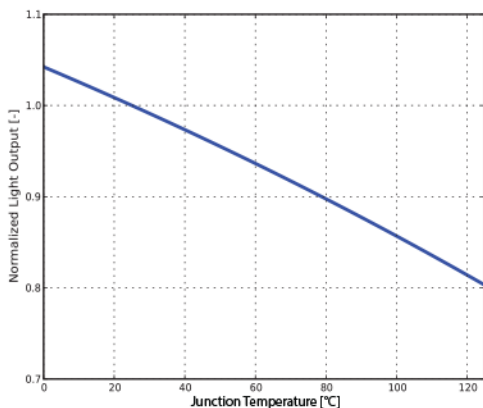
Part Number	Forward Voltage (V)			Typical Temperature Coefficient of Forward Voltage (mV/°C)	Typical Thermal Resistance Junction to Solder Pad (°C/W)
	Minimum	Typical	Maximum		
L130-xxxx003000W21	5.8	6.1	6.6	-2.0 to -4.0	12.0

Absolute Maximum Ratings

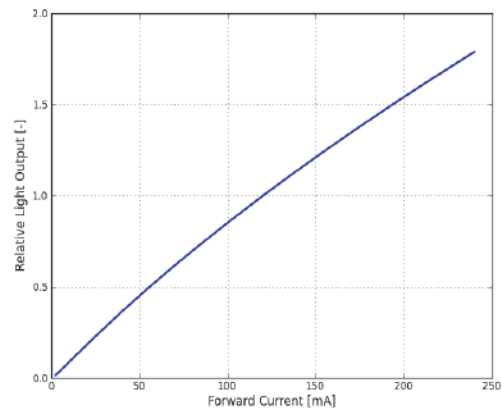
Absolute maximum ratings for LUXEON 3030 2D.

Parameter	Maximum Performance
DC Forward Current	240mA
Peak Pulsed Forward Current	300mA
ESD Sensitivity (ANSI / ESDA / JEDEC JS-001-2012)	Class 2
LED Junction Temperature (DC & Pulse)	125°C
Operating Case Temperature	105°C
Storage Temperature	-40°C to 105°C
Soldering Temperature	JEDEC 020D 260°C
Allowable Reflow Cycles	3
Reverse Voltage (V _{reverse})	-10V

Light Output Characteristics



Typical normalized light output vs. junction temperature at 120mA.



Typical normalized light output vs. forward current at T_j = 25°C.

LUXEON 5050

High efficacy and lumens in a multi-die, high power package, enabling low systems costs



Features and Benefits

- Small LED (4.6mm) enables good optic design for great punch
- Enables highest efficacy system design by driving at low current
- Hot-color targeting ensures color is within ANSI bin at 85°C
- Binned within 3-step and 5-step MacAdam ellipse, ensuring color uniformity
- Compatible with low cost and high efficacy drivers

LUXEON 5050 is a multi-die, high power package that provides high luminance from a single package to enable cost effective, single optic and directional fixture designs. LUXEON 5050 uses an industry standard 5050 surface mount package with the smallest round Light Emitting Surface (LES). LUXEON 5050 comes in 70CRI, 80CRI and 90 CRI with a wide range of CCT's, and offers hot-color targeting to ensure that the LED's are within color target at application conditions of 85°C.

Electrical and Thermal Characteristics

Electrical and thermal characteristics for LUXEON 5050 at 120mA, $T_j=25^\circ\text{C}$.

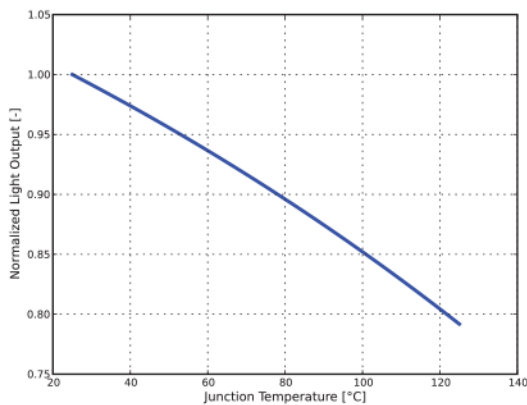
Part Number	Forward Voltage (V)			Typical Temperature Coefficient of Forward Voltage (mV/°C)	Typical Thermal Resistance Junction to Solder Pad (°C/W)
	Minimum	Typical	Maximum		
L150-xxxx50240000	23.5	24.5	26.5	-12	1.9

Absolute Maximum Ratings

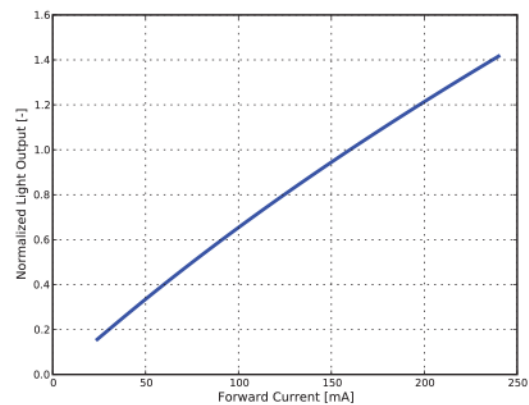
Absolute maximum ratings for LUXEON 5050.

Parameter	Maximum Performance
DC Forward Current	240mA
Peak Pulsed Forward Current	300mA
ESD Sensitivity (ANSI / ESDA / JEDEC JS-001-2012)	Class 2
LED Junction Temperature (DC & Pulse)	125°C
Operating Case Temperature	105°C
Storage Temperature	-40°C to 105°C
Reverse Voltage (V_{reverse})	LUXEON LED's not designed to be driven in reverse bias

Light Output Characteristics



Typical normalized light output vs. junction temperature at test current



Typical normalized light output vs. forward current at $T_j=25^\circ\text{C}$.

LED Driver

Moso LED drivers are used in the Streetlight for optimum performance. Below we can see what are models are used for streetlight of specific wattage:

- Apricum SM 50 - LDP-060M080
- Apricum SM 100 - LDP-105M150
- Apricum SM 150 - LDP-150M214
- Apricum SM 200 - LDP-200M305
- Apricum SM 240 - LDP-240M368



The LDP series is a an outdoor programmable LED driver that operates in constant current model. Monitored by an infrared based programming device, the fully programmed drivers offer all dimming options and a wide range of output current in a single driver, which deliver maximum flexibility with customized operating settings and intelligent control options for lighting manufacturers, as one driver can be programmed for many different luminarie designs. LDP provides built-in timer dimming schedules further increasing the energy savings and CO2 reductions achieved with LED lighting. It also helps clients to improve the management of logistics and stock. The compact metal case and high efficiency enables the driver to operating with high reliability, and extending product lifetime. Overall protection is provided against lightening surge, output over voltage, short circuit, and over temperature, to ensure low failure rate.

Product Features

- Universal input voltage / Full range: 90~305Vac
- Constant power design, outputs programmable
- Output current reconfigurable by infrared controller
- 3-in-1 dimmable (M types): 1~10Vdc / PWM signal /Timer dimming
- Surge protection: 5KV line-line, 10KV line-earth
- Protections: SCP / OVP / OTP
- IP67 design for indoor and outdoor applications
- Suitable for dry / damp / wet locations

Input Specification

Model	Input Voltage	Input Frequency	Leakage Current	Input AC Current	Inrush Current (A)
LDP-060M080	100-277Vac	50/60Hz	0.75mA max	0.9A max	75A
LDP-105M150				1.5A max	
LDP-150M214				2A max	
LDP-200M305				2.8A max	
LDP-240M368				3.3A max	

Output Specification

Model	Max Output Power (W)	Adjust Range of Output Current (A)	Leave Factor Range of Output Voltage (V)	Adjust Range of Output Voltage (V)	Error of Output Current	No Load Output Voltage (V)	Typical Efficiency	Power Factor	THD
LDP-060M080	60	0.21~1.05	45~57	45~80	±5%	≤100V	87%	0.96	15%
LDP-105M150	105	0.14~1.40	60~116	60~150		≤170V	92%		
LDP-150M214	150	0.11~1.10	80~143	80~214		≤240V	91%		
LDP-200M305	200	0.14~1.40	120~190	120~305		≤340V	91%		
LDP-240M368	240	0.11~1.10	190~228	190~368		≤390V	93%		

Technical Specification

Apricum SM with LUMILEDS 3030 LED

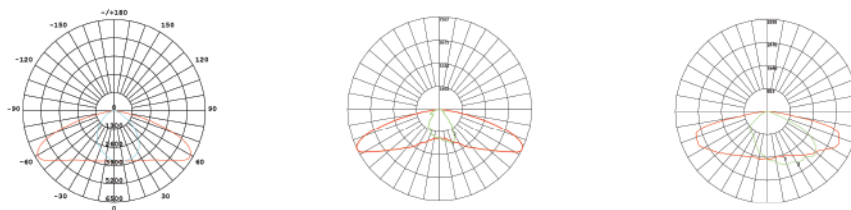
Model	LED unit	Power	Lumens	Efficiency	CCT	Light distribution	CRI	Pole diameter
DUAPSM-50	1 x 63 pc	50	6500	130	3000 4000 5000 5700	Batwing ISO Brightness	>80	Φ40-76mm
DUAPSM-60	1 x 63 pc	60	7200	120				
DUAPSM-100	2 x 63 pcs	100	13000	130				
DUAPSM-120	2 x 63 pcs	120	14400	120				
DUAPSM-150	3 x 63 pcs	150	19500	130				
DUAPSM-180	3 x 63 pcs	180	21600	120				
DUAPSM-200	4 x 63 pcs	200	26000	130				
DUAPSM-240	4 x 63 pcs	240	28800	120				

Apricum SM with LUMILEDS 5050 LED

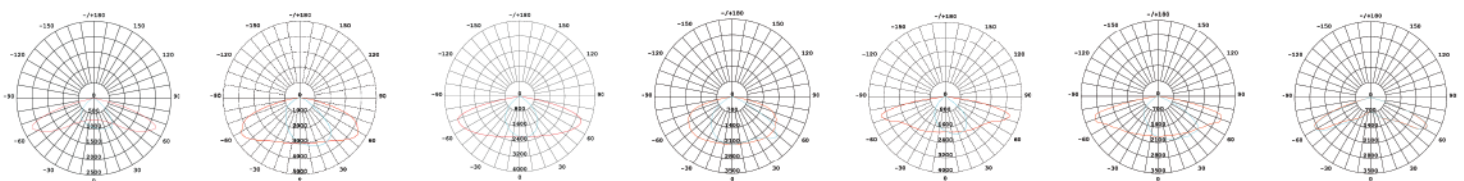
Model	LED unit	Power	Lumens	Efficiency	CCT	Light distribution	CRI	Pole diameter
DUAPSM-50	1 x 28 pc	50	7650	153	3000 4000 5000 5700	Batwing ISO Brightness	>80	Φ40-76mm
DUAPSM-60	1 x 28 pc	60	8820	147				
DUAPSM-100	2 x 28 pcs	100	15300	153				
DUAPSM-120	2 x 28 pcs	120	17640	147				
DUAPSM-150	3 x 28 pcs	150	22950	153				
DUAPSM-180	3 x 28 pcs	180	26460	147				
DUAPSM-200	4 x 28 pcs	200	30600	153				
DUAPSM-240	4 x 28 pcs	240	35280	147				

Photometric Diagram

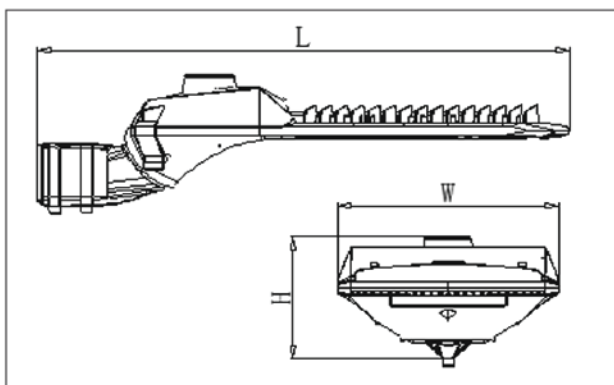
3030 LED's



5050 LED's

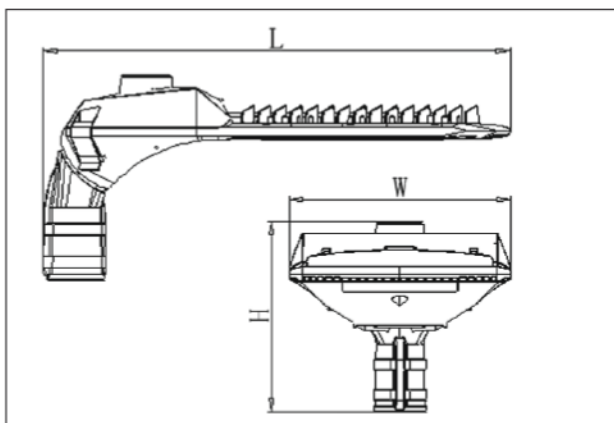


Dimensions



Model	L	W	H	N.W.*
DUAPSM-50	570mm	240mm	180mm	5.8 KG
DUAPSM-100	615mm	330mm	185mm	7.8 KG
DUAPSM-150	680mm			9.0 KG
DUAPSM-200	745mm			10.0 KG
DUAPSM-240	745mm			10.5KG

**Values shown are subject to $\geq 5\%$ tolerance.*



Model	L	W	H	N.W.*
DUAPSM-50	475mm	240mm	280mm	5.8 KG
DUAPSM-100	515mm	330mm	285mm	7.8 KG
DUAPSM-150	580mm			9.0 KG
DUAPSM-200	645mm			10.0 KG
DUAPSM-240	645mm			10.5KG

**Values shown are subject to $\geq 5\%$ tolerance.*

Accessories

Optional Adapter



Model	Mounting O.D. (mm)	Max. Mounting Depth (mm)
DU-L50	$\phi 40 \sim \phi 50$	90
DU-L60	$\phi 55 \sim \phi 65$	100
DU-L70	$\phi 66 \sim \phi 76$	100

Photocell



Photocell



Shorting Cap