

GALAXIA™ AIO SERIES

ARCHITECTURAL SOLAR GARDEN & PATHWAY LIGHTING

HIGH-POWER INTEGRATED INFRASTRUCTURE PLATFORM



The GALAXIA All-in-One (AIO) is a municipal-grade solar lighting system engineered for 12-hour continuous nightly operation. By integrating high-efficacy Philips LEDs, deep-cycle LiFePO4 storage, and MPPT control into a single aerodynamic aluminum housing, it provides a zero-wiring off-grid solution with 190 lm/W system potential and superior architectural elegance.

SYSTEM ARCHITECTURE

- LED Luminaire (15W - 100W)
- Top-Integrated 90% Eff. Panel
- Internal Zero-Memory LiFePO4
- Extruded Aluminum Construction

SYSTEM PARAMETERS

- 12ft – 40ft mounting height range
- 3-night strict minimum autonomy
- Exclusive Standard Black Finish
- 127 mph wind load certified

THE GALAXIA ADVANTAGE



LIFEPO₄ VS. LEGACY NIMH

Unlike competitors relying on legacy NiMH batteries prone to "memory effect," GALAXIA utilizes modern LiFePO₄ for 3,000+ cycles and deeper safe discharge. Operates flawlessly in extreme climates from -22°F to 140°F.



190 LM/W PHILIPS OPTICAL CORE

Achieve required light levels with 30% less battery draw. Premium Philips chipsets deliver industry-leading efficacy, ensuring maximum ground coverage and photometric accuracy for roadway projects.



365-DAY ANTI-BLACKOUT LOGIC

Our Gen-4 MPPT controller dynamically monitors battery health and solar input, automatically deploying adaptive dimming profiles to guarantee light on the ground during consecutive low-sun winter days.



IOT & SMART SENSOR READY

Engineered for smart cities. Standard configurations support PIR and Microwave motion sensing for on-demand output, and are fully upgradeable to LoRa wireless central monitoring and control.



BAA COMPLIANT & PROVEN

Buy American Act compliant and designed for municipal infrastructure. GALAXIA features IP65 / IK10 impact protection out of the box and is fully backed by industry-leading 10-year component warranties.

TECHNICAL SPECIFICATIONS

• LED LUMINAIRE & OPTICS

System Efficacy	150–190 lm/W
LED Chipset	Philips
Power Consumption	15W – 100W
Color Temp (CCT)	27K / 30K / 40K / 50K
Light Distribution	Type II, Type III
Color Rendering (CRI)	≥ 70 (80 opt.)
Lifespan (LM80)	100,000 Hours
Luminaire Warranty	10 Years

• BATTERY

Battery Chemistry	LiFePO ₄
Cycle Life (80% DOD)	≥ 3,000 Cycles
Management	Passive Cell Balancing
Expected Life	8–15 Years Typical
Battery Warranty	8 Years

• SOLAR PANEL

Technology	Monocrystalline Silicon
Panel Efficiency	90%
Orientation	Top-Integrated Luminaire (AIO)
Solar Warranty	20 Years

• MECHANICAL & MOUNTING

Housing Material	ADC12 + 6063 Extrusion
Finish Color	Black std. (Sliver or Custom opt.)
Hardware	Stainless Steel
Mounting Type	Slip Fitter (SF)
Wind Load Rating	127 mph
Ingress / Impact	IP65 / IK10
Operating Temp	-22°F to 140°F

• MPPT CONTROLLER

Tracking Efficiency	> 99%
Control System	MPPT std. (Wireless Zigbee opt.)
Dimming	4-Step Programmable
System Safeties	Over-charge / Deep-discharge
MPPT Warranty	8 Years

- **Wireless Control Available: Monitoring, GPS tracking, Alerts**
- **Motion Sensor Available**

Specifications represent standard configurations and are subject to final engineering and site-specific conditions. Custom configurations are available upon request.

SOLAR ENERGY PERFORMANCE

CUSTOM SIZING EXAMPLE (GALAXIA-AIO-100 @ SMART PROFILE)

LED Power (Max)	100W
Smart Profile (3h 100% 3h 50% 6h 10%)	12 Hours
Integrated PIR Motion Sensor	Included / Active
Daily Energy Consumption	510 Wh
Required Battery Storage (1 Nights @ 80% DoD)	$(510 \text{ Wh} \times 1) \div 0.8 = 637.5 \text{ Wh}$
Actual Battery Supplied (Optimized)	640 Wh (12.8V 50Ah)
Required Solar Generation (Zone C)	510 Wh / Day
CA/TX Irradiance Sizing (510Wh ÷ 5.67h ÷ 90% panel eff)	99.99W Required
Standard Solar Module Selected	100W Panel

RESULT: CONFIGURED FOR 1-DAY AUTONOMY. BATTERY MATCHES MUNICIPAL SAFETY STANDARDS.

CONFIGURATION GROUP MATRIX

LED LOAD	SOLAR MODULE	BATTERY CAPACITY	ENERGY STORAGE	AUTONOMY DAYS	REC. POLE HEIGHT
15W	15W	12.8V 15Ah	192 Wh	1 Night	12 - 15 ft
20W	20W	12.8V 15Ah	192Wh	1 Night	12 - 15 ft
30W	30W	12.8V 15Ah	192 Wh	1 Night	15 - 20 ft
40W	40W	12.8V 20Ah	256 Wh	1 Night	20 - 25 ft
50W	50W	12.8V 30Ah	384 Wh	1 Night	20 - 25 ft
60W	60W	12.8V 30Ah	384 Wh	1 Night	25 - 30 ft
70W	70W	12.8V 30Ah	384 Wh	1 Night	25 - 30 ft
80W	80W	12.8V 40Ah	512 Wh	1 Night	30 - 35 ft
90W	90W	12.8V 45Ah	576 Wh	1 Night	30 - 35 ft
100W	100W	12.8V 60Ah	768 Wh	1 Night	35 - 40 ft

MANDATORY NOTE:

The values above represent standard factory configurations designed to meet or exceed a minimum 1-night autonomy target. Autonomy calculations are based on a 12-hour nightly profile: 3h @ 100%, 3h @ 50%, 6h @ 10% (5.1 equivalent full-load hours). Solar sizing assumes 5.67 peak sun hours (PSH) and typical system losses. Battery capacities are nominal; actual performance varies with DoD, temperature, and site-specific conditions.

Motion sensor activates 100% during occupancy, then returns to preset level.

As a direct manufacturer, we provide full system customization to meet project-specific environmental requirements.

U.S. SOLAR DESIGN ZONES

ZONE A – NORTHERN / LOW SUN

2.4 sun hours. Conservative winter baseline for northern states.

Design approach: Largest panel and battery reserve.

ZONE B – CENTRAL / MODERATE SUN

3.3 sun hours. Balanced winter design basis for central U.S. applications.

Design approach: Balanced solar and battery sizing.

ZONE C – SOUTHERN / HIGHER SUN

4.4 sun hours. Reliable winter design basis for southern states.

Design approach: Optimized panel size with high recharge margin.

ZONE D – EXTREME CONDITIONS

1.5 sun hours. Project-specific baseline for Alaska, mountain regions, etc.

Design approach: Maximum custom engineering basis.

FACTORY-SET DIMMING SCHEDULE

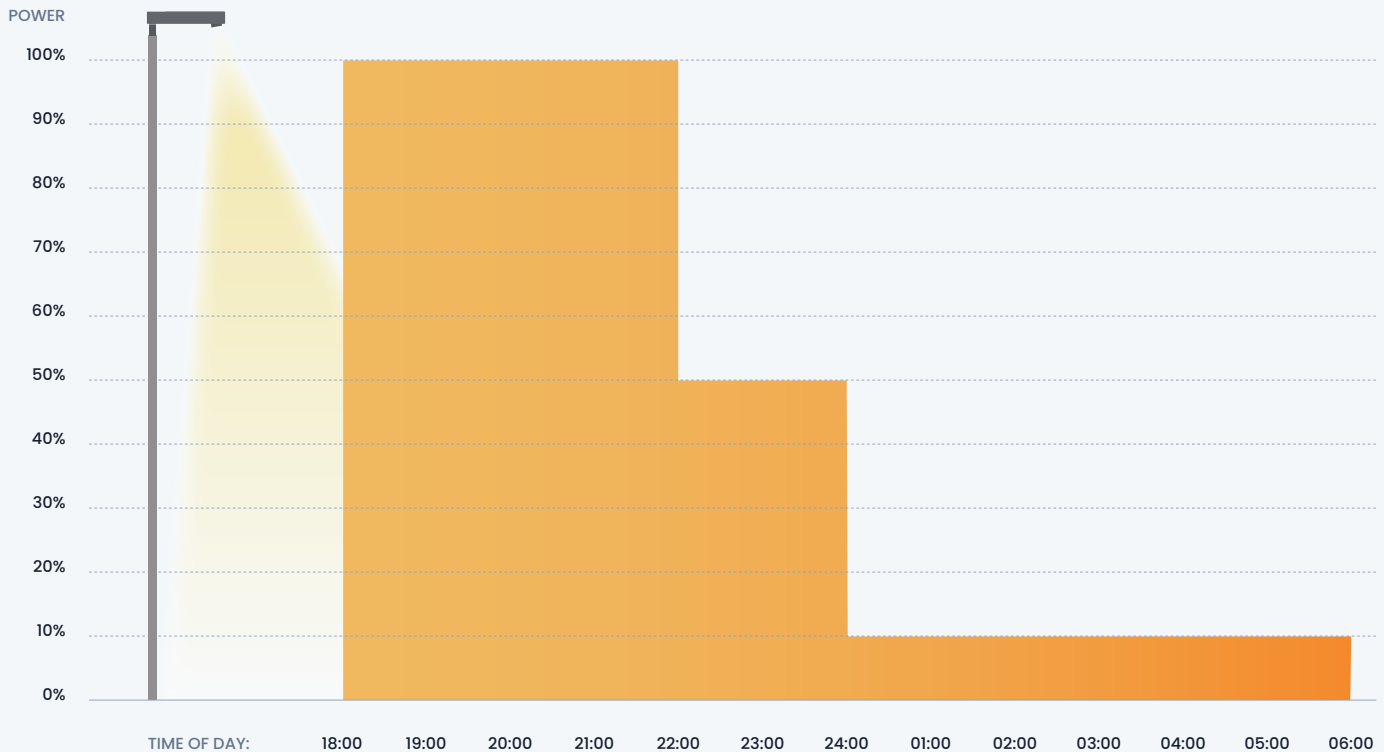
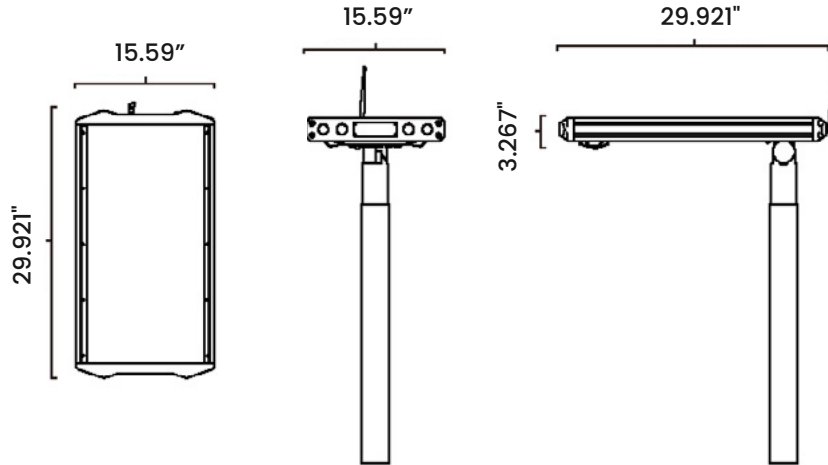


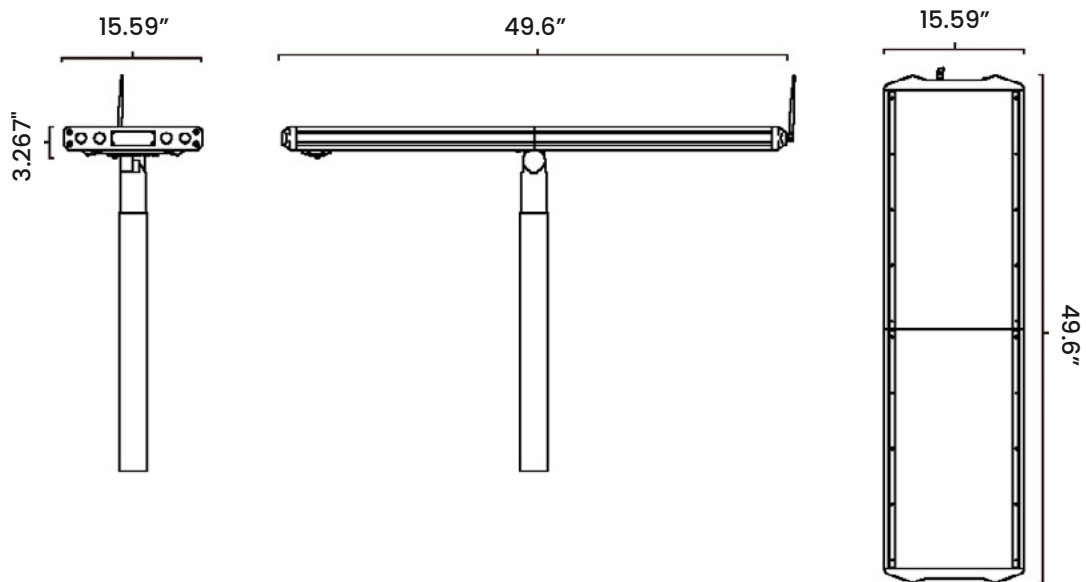
Chart metrics for reference only, custom schedule set as required.

DIMENSIONS

GALAXIA-S 15W / 20W



GALAXIA-D 30W / 40W / 50W



Standard dimensions are available as a baseline; however, all fixtures are typically customized to meet specific project requirements, so final sizes may vary. Please confirm exact dimensions with the sales team prior to specification or procurement.

ORDERING INFORMATION

SERIES	CONFIG	WATTAGE	CCT	OPTICS	FINISH	MOUNTING	OPTIONS
GALAXIA-AIO	S (Single)	15W	27K	T2 (Type II)	BLK (Black)	SF (Slip Fitter)	NONE (Standard)
		20W					MOT (Motion Sensor)
	D (Double)	30W	40K (Standard)	T3 (Type III)	SLV (Silver)	SF (Slip Fitter)	SMC (Smart Control)
		40W					50K
		50W					
		60W					
		70W					
		80W					
	90W						
	100W						

Note: Recommended 100W standard configurations.

EXAMPLE PART NUMBER

GALAXIA - AIO - S - 40W - 40K - T3 - BLK - SF - SMC | QTY: 20

FIXTURE SCHEDULE

TYPE	PART NUMBER	QTY

Final configuration shall be verified against project-specific electrical and photometric requirements.

Custom configurations are available upon request.

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SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE