

MARS™ SERIES

ARCHITECTURAL SOLAR AREA & PEDESTRIAN LIGHTING

INTEGRATED ANCHOR BOLT ALUMINUM PLATFORM



The MARS Series is an architectural solar lighting column engineered for high-end pedestrian environments. By integrating the high-efficiency solar array and LiFePO4 battery storage directly into the Extruded 6063-T6 Aluminum Anchor Bolt Pole, MARS provides a clean, 360-degree aesthetic profile in a specialized Standard Black finish, ensuring maximum structural integrity and architectural purity.

CORE ARCHITECTURE

- LED Luminaire (30W - 60W)
- Pole-Integrated PV Array
- Zero-Memory LiFePO4 Battery
- Anchor Bolt Aluminum Column

SYSTEM PARAMETERS

- 9ft - 15ft specialized mounting height
- 3-night autonomy standard
- Standard Black Architectural Finish
- 127 mph certified wind load rating

THE MARS ADVANTAGE



LIFEPO₄ VS. LEGACY NIMH

MARS utilizes modern Lithium Iron Phosphate (LiFePO₄) for 3,000+ cycles and deep safe discharge. Our chemistry suffers zero "memory effect" and maintains superior thermal stability compared to legacy NiMH batteries used by competitors.



365-DAY ANTI-BLACKOUT LOGIC

Guaranteed year-round illumination. Our integrated SRNE MPPT controller dynamically monitors battery health, automatically deploying adaptive dimming to prevent dark poles during low-sun winter solstice events.



ANCHOR BOLT INTEGRATED DESIGN

MARS embeds the solar array directly into the structural aluminum column. The anchor bolt base design provides high-strength municipal mounting while maintaining the clean aesthetic profile required for architectural projects.



170 LM/W PHILIPS OPTICAL CORE

Featuring premium Philips LED chipsets, MARS delivers up to 170 lm/W delivered efficacy. High-efficiency optics ensure maximum ground coverage while minimizing nightly energy draw.



ARCHITECTURAL ELEGANCE

Don't compromise park aesthetics with bulky NEMA battery boxes. MARS integrates the high-capacity battery directly into the sleek post-top luminaire housing, presenting a clean, modern profile suitable for high-end HOA's.



BAA COMPLIANT & PROVEN

Buy American Act compliant and designed for municipal infrastructure. MARS 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	150–170 lm/W
LED Chipset	Philips
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	Integrated in Pole
Protection	Smart BMS
Battery Warranty	5–8 Years

• SOLAR PANEL

Technology	Monocrystalline Silicon
Panel Efficiency	35%
Orientation	Integrated in Pole
Solar Warranty	20 Years

• MECHANICAL & MOUNTING

Housing Material	Die-cast Aluminum ADC12
Finish Color	Black std. (Sliver or Custom opt.)
Mounting Type	Anchor Bolt (AB), Direct Bury (DB)
Wind Load Rating	127 mph
Ingress / Impact	IP65 / IK08
Operating Temp	-13°F to 113°F

• ANCHOR BOLT ALUMINUM POLE

Material	Extruded 6063-T6
Mounting	Anchor Bolt Base
Wind Rating	127 mph
Integration	Solar Panel Integrated
Standard Finish	Black Only
Access	Reinforced Hand-hole

• MPPT CONTROLLER

Tracking Efficiency	> 99%
Control System	MPPT std. (Wireless Zigbee opt.)
Dimming	4-Step Programmable
Diagnostics	Monitoring, GPS Tracking, Alerts
MPPT Warranty	5–8 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 (MARS-30 @ SMART PROFILE)

LED Power (Max)	30W
Smart Profile (3h 100% 3h 50% 6h 10%)	12 Hours
Integrated PIR Motion Sensor	Included / Active
Daily Energy Consumption	153 Wh
Required Battery Storage (3 Nights @ 80% DOD)	$(153 \text{ Wh} \times 3) / 0.8 = 573.75 \text{ Wh}$
Actual Battery Supplied (Optimized)	576 Wh (12.8V 45Ah)
Required Solar Generation (Zone C)	153 Wh / Day
Vertical Recovery Sizing ($153 \text{ Wh} \times 3 \div 4.92\text{h} \div 35\% \text{ eff}$)	266.55W Required
Standard Solar Module Selected	300 W Panel

RESULT: CONFIGURED FOR 3-DAY AUTONOMY. BATTERY MATCHES MUNICIPAL SAFETY STANDARDS.

CONFIGURATION GROUP MATRIX

CONFIG	LED LOAD	SOLAR MODULE	BATTERY CAPACITY	ENERGY STORAGE	AUTONOMY DAYS	POLE HEIGHT
Single	30W	300W	12.8V 45Ah	576 Wh	3 Nights	10 / 12 ft
Single	60W	600W	25.6V 45Ah	1161 Wh	3 Nights	13 / 15 / 18 ft
Double	30W (x2)	600W	12.8V 45Ah (x2)	1161 Wh	3 Nights	13 / 15 / 18 ft
Tiered	60 W 30 W	900W	25.6V 45Ah 12.8V 45Ah	1161 Wh 576 Wh	3 Nights	13 / 15 / 18 ft

MANDATORY NOTE:

The values above represent standard factory configurations designed to meet or exceed a minimum 3-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 4.92 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

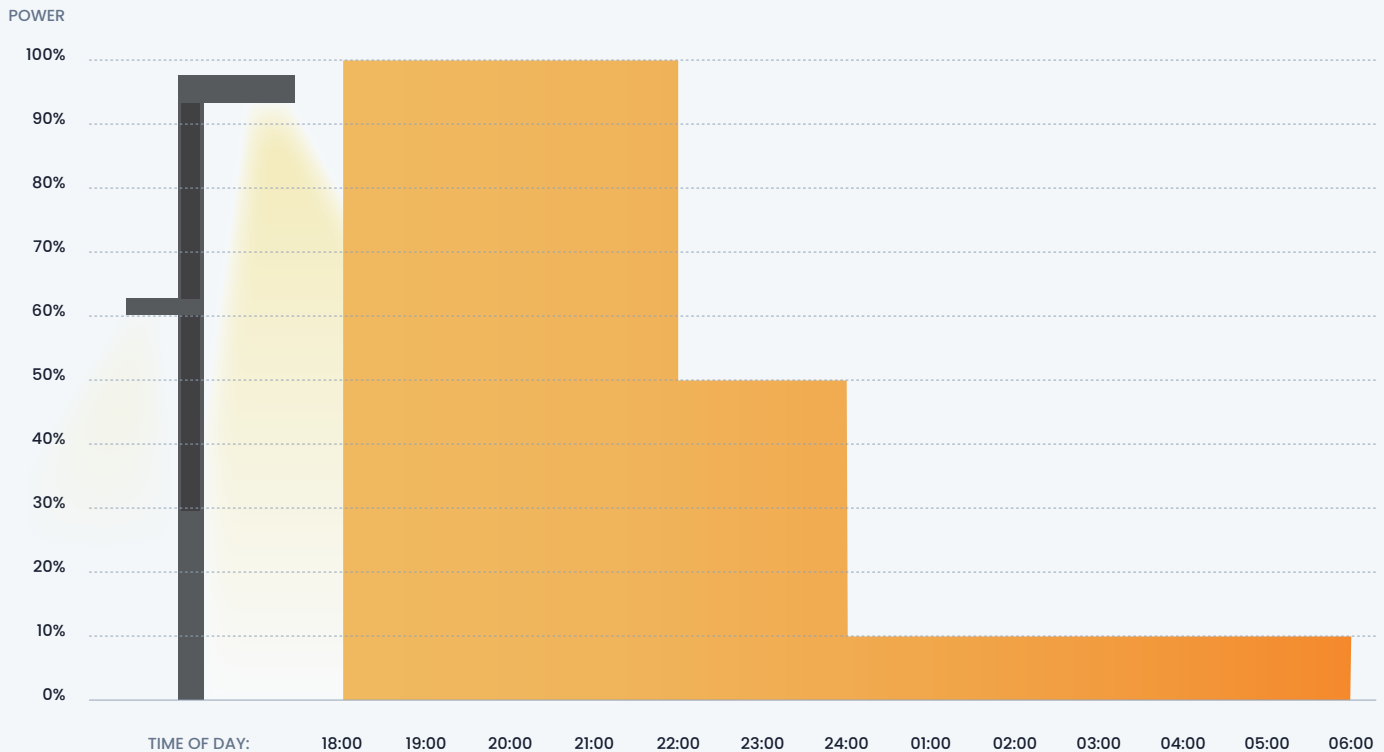
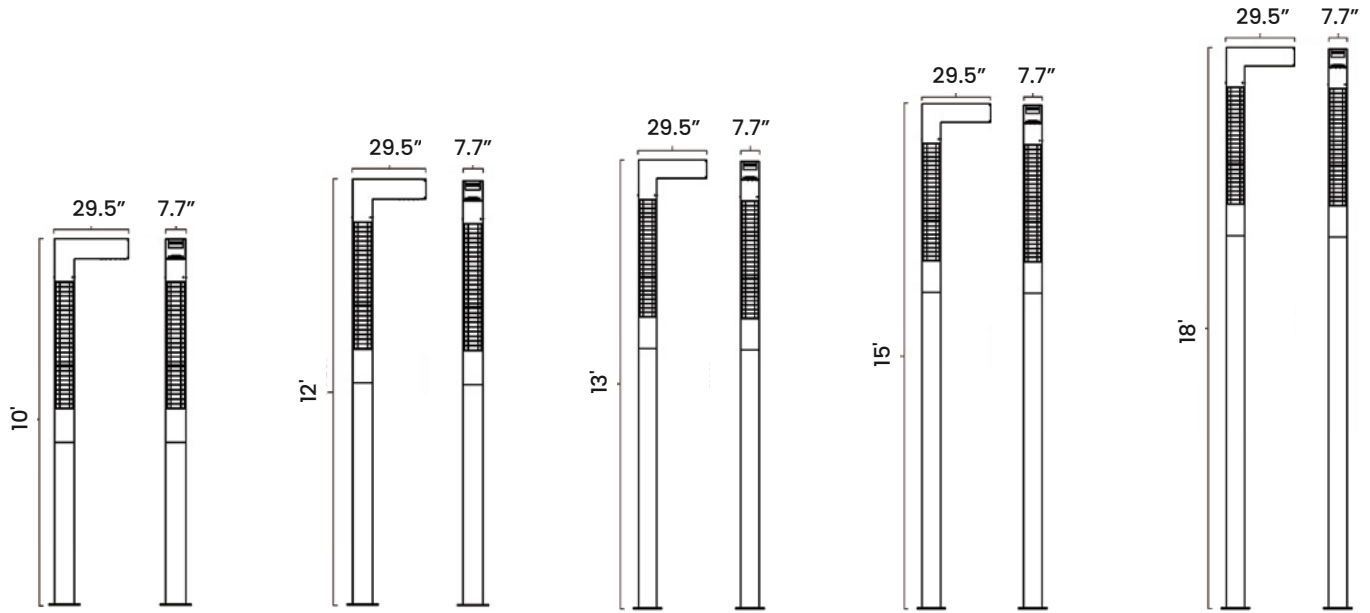


Chart metrics for reference only, custom schedule set as required.

DIMENSIONS

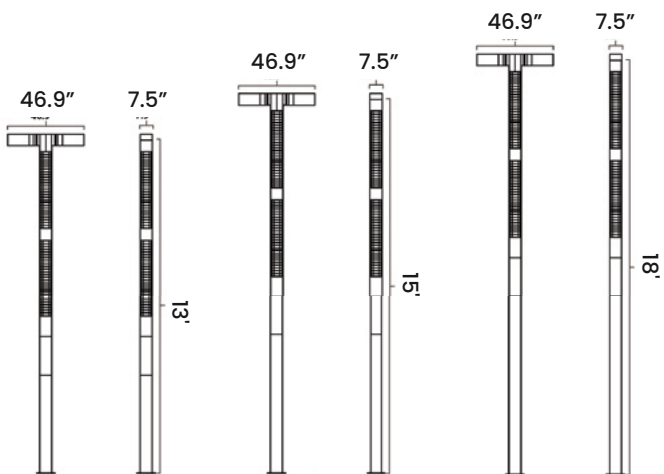
MARS-S (SINGLE)

S-10 / S-12 / S-13 / S-15 / S-18



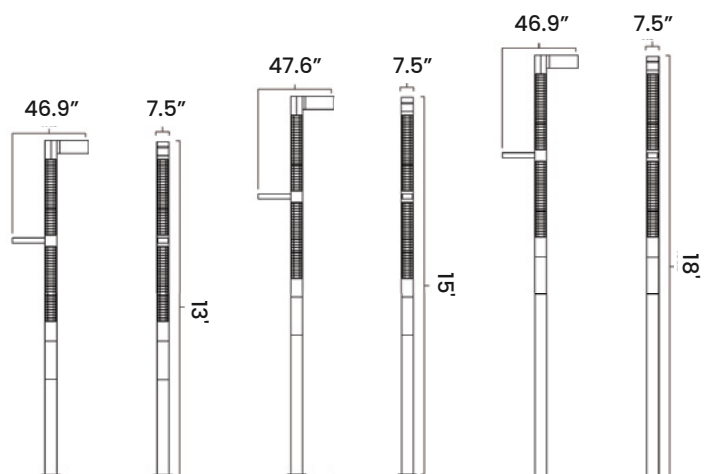
MARS-D (DOUBLE)

D-13 / D-15 / D-18



MARS-DS (TIERED)

DS-13 / DS-15 / DS-18



ORDERING INFORMATION

SERIES	CONFIG	WATTAGE	HEIGHT	CCT	OPTICS	FINISH	MOUNTING	OPTIONS
MARS	S (Single)	30W	10 / 12	27K 30K 40K (Standard) 50K	T2 (Type II) T5 (Type III)	BLK (Black Standard)	AB (Anchor Bolt) DB (Direct Bury)	NONE (Standard)
		60W	13 / 15 / 18			DRK (Dark Grey)		MOT (Motion Sensor)
	D (Double)	60W	13 / 15 / 18			WHT (White)		SMC (Smart Control)
		DS (Tiered)	60W + 30W			13 / 15 / 18		SLV (Silver)
						WDG (Wood Grain)		

Note: Recommended S-30W/60W standard configurations.

EXAMPLE PART NUMBER

MARS - DS - 60W - 18 - 40K - T2 - BLK - AB - MOT | 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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