HERA™ SERIES

MODULAR VERTICAL SOLAR LIGHTING PLATFORM

3-NIGHT AUTONOMY RECOVERY STANDARD

HERA is engineered for extreme flexibility. The modular vertical solar wraps are designed for Easy Retrofit onto existing structural poles or New Construction deployments. By integrating 360° shingled PV, HERA captures maximum ambient light without the aesthetic or wind-load impact of traditional flat panels.

MARKET APPLICATIONS

- Mixed-Use Urban Centers
- University & Corporate Campuses
- Integrated Mobility & Public Hubs
- Community & Residential Connectivity

RETROFIT COMPATIBLE

SMART MONITORING

ENGINEERING STANDARD

HERA systems are sized to provide a strict 3-night autonomy reserve based on an 80% DOD standard. Our vertical HPBC modules are specifically engineered to provide complete reserve recovery (3 full days of energy) within a single 3.3h sunlight window (Zone B).

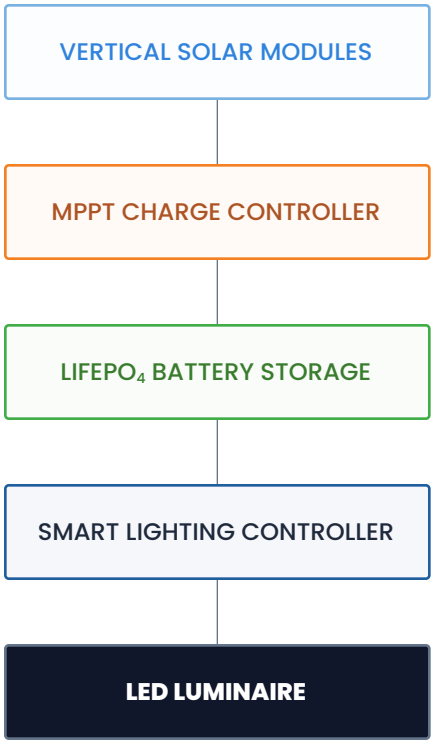
AUTONOMY STANDARD

3 Nights Standard

USABLE CAPACITY

80% Depth of Discharge

SYSTEM ARCHITECTURE



SYSTEM YIELD EFFICIENCY

90%

TECHNICAL SPECIFICATIONS

• LED LUMINAIRE

System Efficacy	150–190 lm/W
LED Chipset	Philips / Nichia
Power Consumption	20W — 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 STORAGE

Battery Chemistry	$LiFePO_4$
Cycle Life (80% DOD)	≥ 3,000 Cycles
Protection	Smart BMS Active Control
Battery Warranty	8 Years

• VERTICAL SOLAR PANEL

Technology	HPBC Monocrystalline Mono
Vertical Factor	35% Effective Yield
Orientation	360° Omnidirectional
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 / IK08

• MPPT CONTROLLER

Tracking Efficiency	> 99%
Control System	MPPT std. (Wireless Zigbee opt.)
Dimming	4-Step Programmable
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.

ENGINEERING SIZING BASIS

CUSTOM SIZING EXAMPLE (HERA-40 @ SMART PROFILE)

LED Power (Max)	40W
Smart Profile (3h 100% | 3h 50% | 6h 10%)	12 Hours
Integrated PIR Motion Sensor	Included / Active
Daily Energy Consumption	204 Wh
Required Battery Storage (3 Nights @ 80% DOD)	(204 Wh x 3) / 0.8 = 765 Wh
Actual Battery Supplied (Optimized)	768 Wh (12.8V 60Ah)
Required Solar Generation (Zone C)	204 Wh / Day
Vertical Recovery Sizing (204 Wh x 3 ÷ 4.45h ÷ 35% eff)	392.93W Required
Standard Solar Module Selected	400W Panel

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

CONFIGURATION GROUP MATRIX

LED LOAD	SOLAR MODULE	BATTERY CAPACITY	ENERGY STORAGE	AUTONOMY DAYS	REC. POLE HEIGHT
20W	**200W**	12.8V 30Ah	**384 Wh**	3 Nights	12 – 15 ft
30W	**300W**	12.8V 45Ah	**576 Wh**	3 Nights	12 – 15 ft
40W	**400W**	12.8V 60Ah	**768 Wh**	3 Nights	15 – 20 ft
50W	**500W**	25.6V 40Ah	**1024 Wh**	3 Nights	20 – 25 ft
60W	**300W (x2)**	25.6V 45Ah	**1152 Wh**	3 Nights	25 – 30 ft
70W	**300W + 400W**	25.6V 50Ah	**1280 Wh**	3 Nights	25 – 30 ft
80W	**400W (x2)**	25.6V 60Ah	**1536 Wh**	3 Nights	30 – 35 ft
90W	**400W + 500W**	25.6V 75Ah	**1920 Wh**	3 Nights	30 – 35 ft
100W	**500W (x2)**	25.6V 75Ah	**1920 Wh**	3 Nights	35 – 40 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 4.45 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

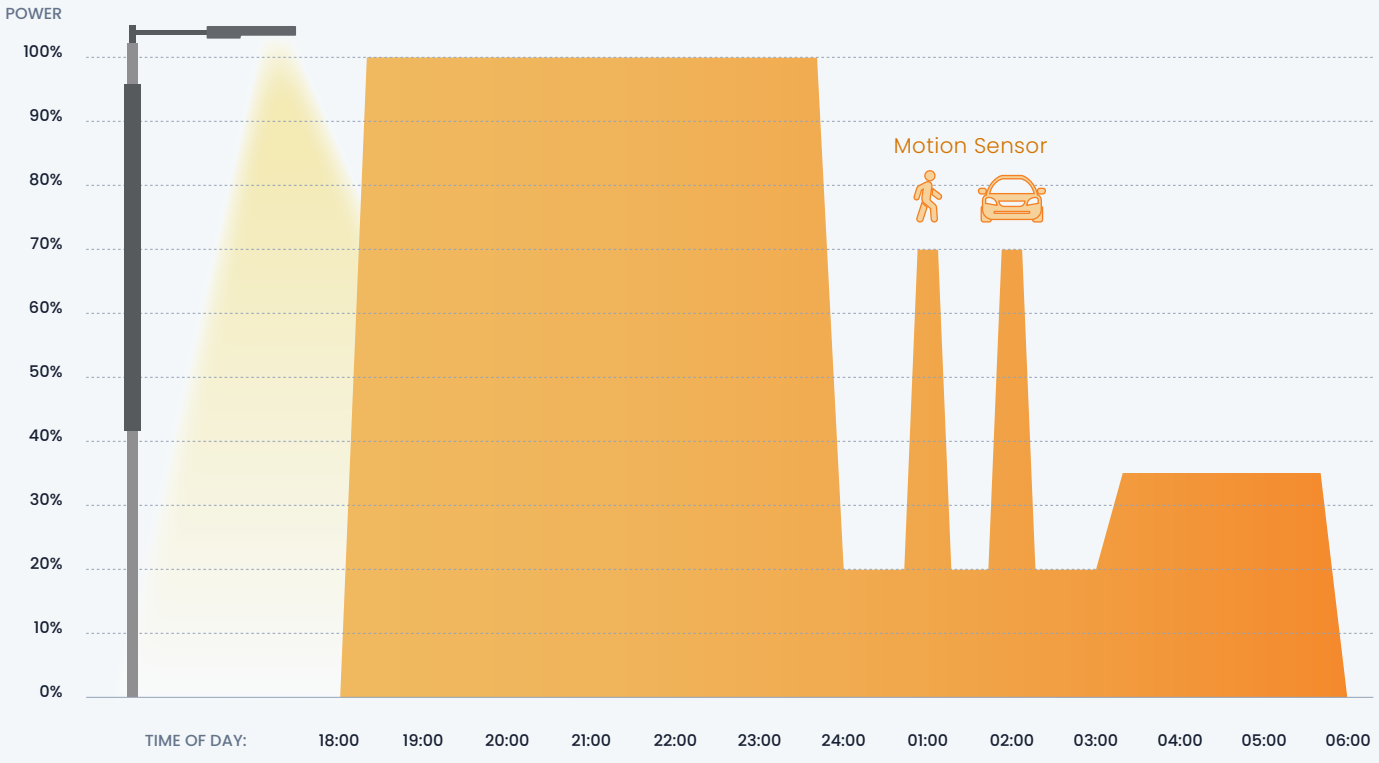


Chart metrics for reference only, custom schedule set as required.

HARDWARE INTEGRATION & DEPLOYMENT

Installation Configurations

The system supports comprehensive new-build installations utilizing an integrated LED fixture, mounting arm, and Hera vertical cylindrical solar modules. Power electronics, including the battery and MPPT controller, are deployable in two standard configurations:

- **Internal Pole Integration:** Components are housed within the pole cavity for enhanced security and environmental protection.
- **Subterranean Vault:** Housing in a reinforced underground enclosure for simplified maintenance access and thermal stability.

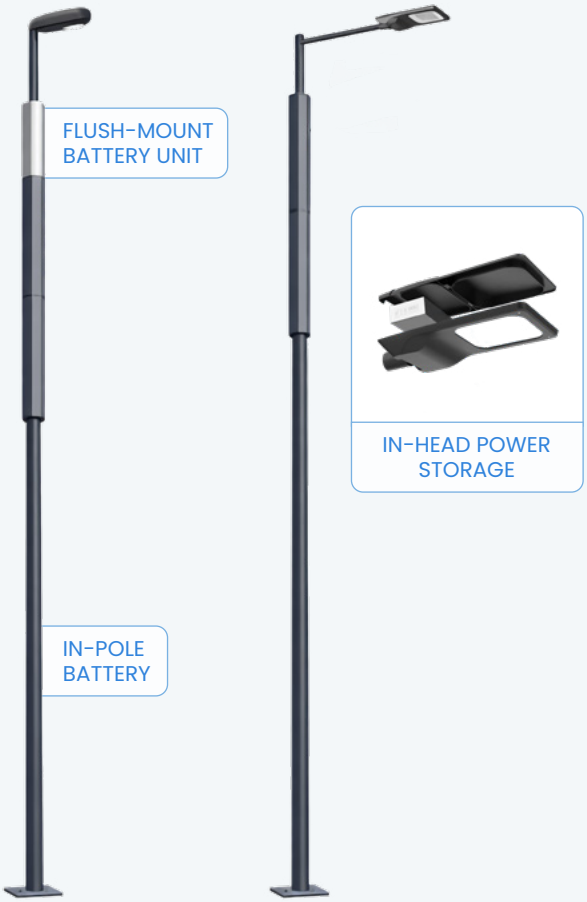
Retrofit Adaptability

For existing infrastructure, three modular retrofit options to facilitate technology upgrades without structural replacement:

- **In-Pole Storage:** Internal component placement for compatible hollow-core poles.
- **Flush-Mount External Unit:** A low-profile exterior enclosure designed for alignment with the solar array.
- **Integrated-Head Assembly:** An all-in-one power storage and management unit housed within the luminaire head.

NEW PROJECT

RETROFIT



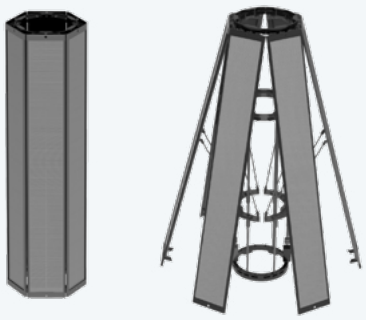
SOLAR MODULE

Versatile Pole Adaptability

The vertical solar panel assembly is engineered for compatibility with a wide range of round pole diameters, enabling flexible integration across diverse project conditions and existing infrastructure. Its adaptable mounting system accommodates common pole gauges without requiring custom fabrication, reducing installation complexity and field modifications.

The vertical orientation not only supports consistent solar exposure in constrained environments but also maintains a compact, pole-conforming profile that minimizes visual impact and structural load considerations.

Ø 2.36" ~ 10.43"



Designed for Easy Access

Ø 2.36" Ø 3.5" Ø 4.25" Ø 4.49" Ø 5.23" Ø 5.51" Ø 6.25" Ø 6.61" Ø 10.43"

SPECIFICATIONS — SOLAR MODULES

VERTICAL SOLAR PANEL – COMPARISON TABLE (LOW OUTPUT SERIES)

(18V Class)

CATEGORY	SPECIFICATION	HERA-PV100-18	HERA-PV120-18	HERA-PV160-18	HERA-PV200-18
Electrical	**Power (Pmax)**	100W	120W	160W	200W
	Open Circuit Voltage (Voc)	22V	22V	22V	22V
	Short Circuit Current (Isc)	5.63A	6.75A	9A	11.26A
	Max Power Voltage (Vmp)	18.83V	18.83V	18.83V	18.83V
	Max Power Current (Imp)	5.31A	6.37A	8.62A	10.62A
	Cell Efficiency	>26%	>26%	>26%	>26%
	Operating Temperature	-40°F to 185°F			
	System Voltage	1000 V DC (IEC) / 1500 V DC (UL)			
	Tolerance	-3% ~ +3%			
Component	**Cell Type**	HBC Mono	HBC Mono	HBC Mono	HBC Mono
	Dimensions (Ø × H) (in)	Ø10.43" × 32.09"	Ø10.43" × 36.14"	Ø10.43" × 50.31"	Ø10.43" × 59.45"
	Weight	18.7 lbs	23.1 lbs	29.8 lbs	33.1 lbs
	Installation Ø Range (in)	Ø2.36" — Ø6.61"	Ø2.36" — Ø6.61"	Ø2.36" — Ø6.61"	Ø2.36" — Ø6.61"
	Panel Sides	6			
	Max Parallel Quantity	5			
	Junction Box Rating	IP66			
	Wind Load	127 mph			
	Salt Spray Test	1000 hrs			
Materials	**Solar Cell**	Mono Cell			
	Glass	Tempered Glass (0.13")			
	EVA	High Transmittance, Anti-Oxidation, Anti-Corrosion, UV Resistant			
	TPE (Black)	High Temperature Resistance, Fatigue Resistance, Creep Resistance, Impact Resistance			
Temp. Coeff.	**Pmax**	-0.47%/°C			
	Voc	-0.34%/°C			
	Isc	0.045%/°C			

SPECIFICATIONS — SOLAR MODULES

VERTICAL SOLAR PANEL – COMPARISON TABLE (HIGH OUTPUT SERIES)

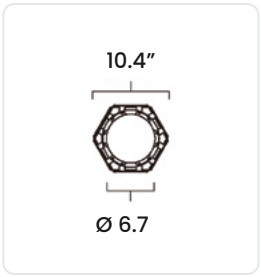
(36V Class)

CATEGORY	SPECIFICATION	HERA-PV300-36	HERA-PV400-36	HERA-PV500-36	HERA-PV600-36
Electrical	**Power (Pmax)**	300W	400W	500W	600W
	Open Circuit Voltage (Voc)	40V	40V	40V	40V
	Short Circuit Current (Isc)	8.72A	11.63A	14.53A	17.44A
	Max Power Voltage (Vmp)	36.46V	36.46V	36.46V	36.46V
	Max Power Current (Imp)	8.22A	11A	13.71A	16.46A
	Cell Efficiency	>26%	>26%	>26%	>26%
	Operating Temperature	-40°F to 185°F			
	System Voltage	1000 V DC (IEC) / 1500 V DC (UL)			
	Tolerance	-3% ~ +3%			
Component	**Cell Type**	HBC Mono	HBC Mono	HBC Mono	HBC Mono
	Dimensions (Ø × H) (in)	Ø16.38" × 66.93"	Ø16.38" × 73.15"	Ø16.38" × 82.28"	Ø16.38" × 92.72"
	Weight	49.6 lbs	66.1 lbs	67.2 lbs	100.3 lbs
	Installation Ø Range (in)	Ø6.61" – Ø10.63"	Ø6.61" – Ø10.63"	Ø6.61" – Ø10.63"	Ø6.61" – Ø10.63"
	Panel Sides	6			
	Max Parallel Quantity	5			
	Junction Box Rating	IP66			
	Wind Load	127 mph			
	Salt Spray Test	1000 hrs			
Materials	**Solar Cell**	Mono Cell			
	Glass	Tempered Glass (0.13")			
	EVA	High Transmittance, Anti-Oxidation, Anti-Corrosion, UV Resistant			
	TPE (Black)	High Temperature Resistance, Fatigue Resistance, Creep Resistance, Impact Resistance			
Temp. Coeff.	**Pmax**	-0.47%/°C			
	Voc	-0.34%/°C			
	Isc	0.045%/°C			

DIMESIONS — LED LUMINAIRE

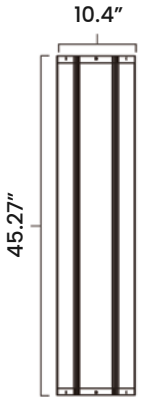
HERA-PV SOLAR MODULES (LOW OUTPUT SERIES)

TOP VIEW

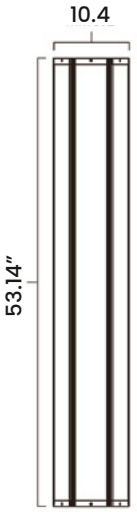


PV-100

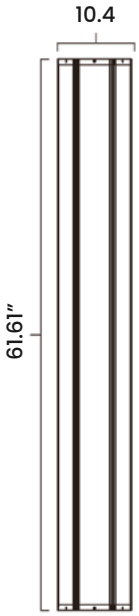
PV-120



PV-160

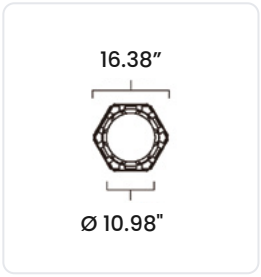


PV-200



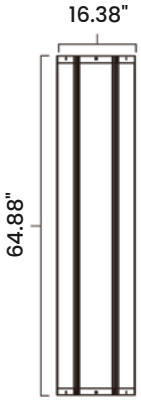
HERA-PV SOLAR MODULES (HIGH OUTPUT SERIES)

TOP VIEW

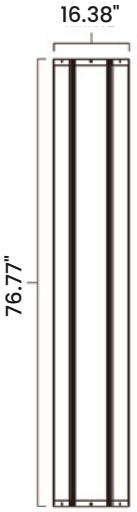


PV-300

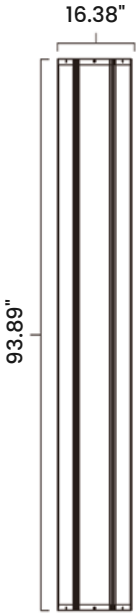
PV-400



PV-500



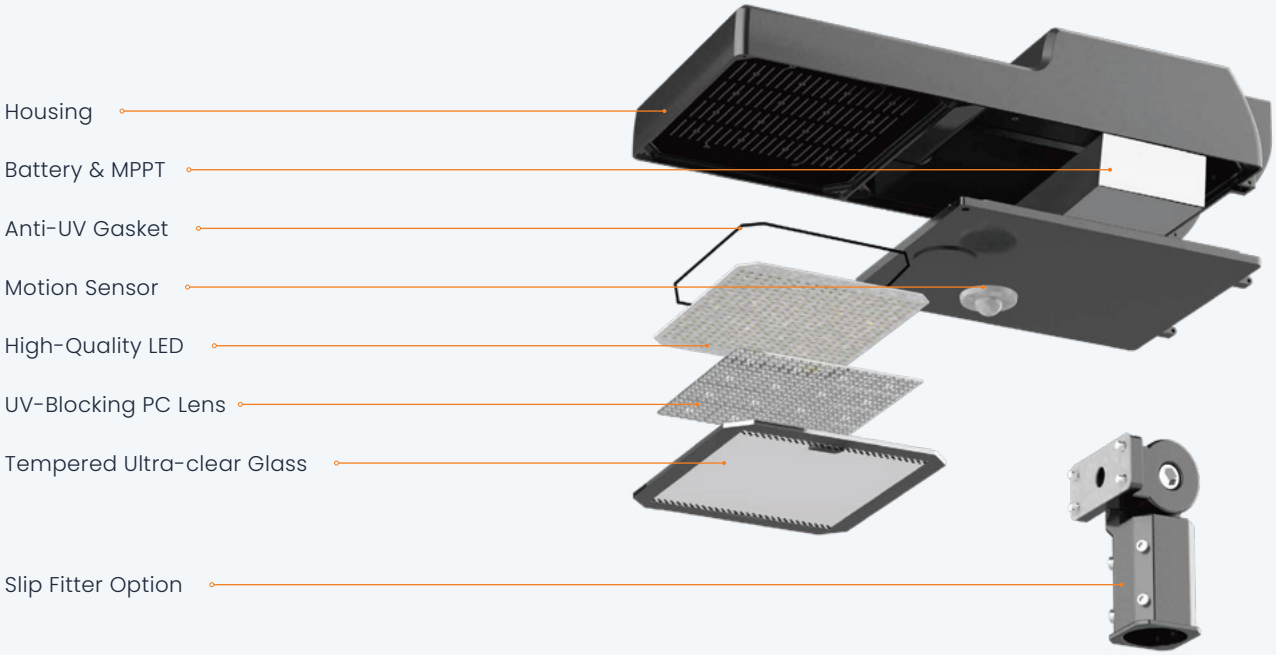
PV-600



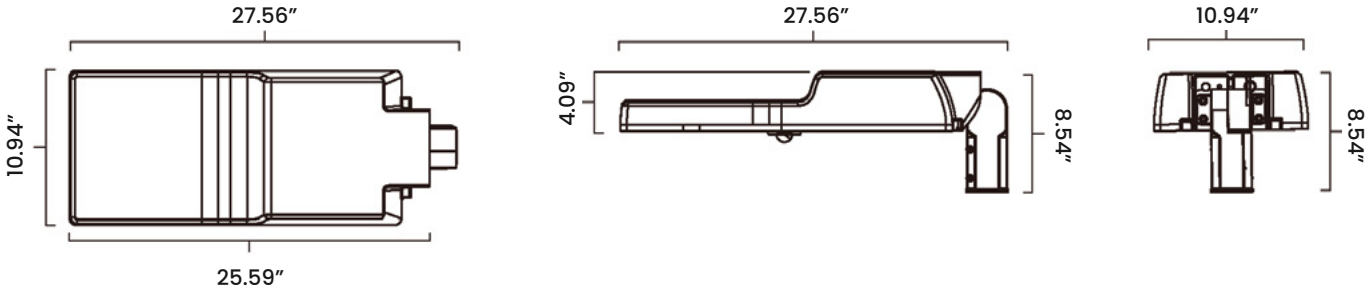
THE APOLLO

The Apollo LED luminaire is constructed with a die-cast ADC12 aluminum housing and finished with a high-performance electrostatic coating, ensuring durability in high-temperature and high-humidity environments. Optical components include tempered glass and UV-resistant polycarbonate (PC) lenses, maintaining long-term light transmission and performance without material degradation.

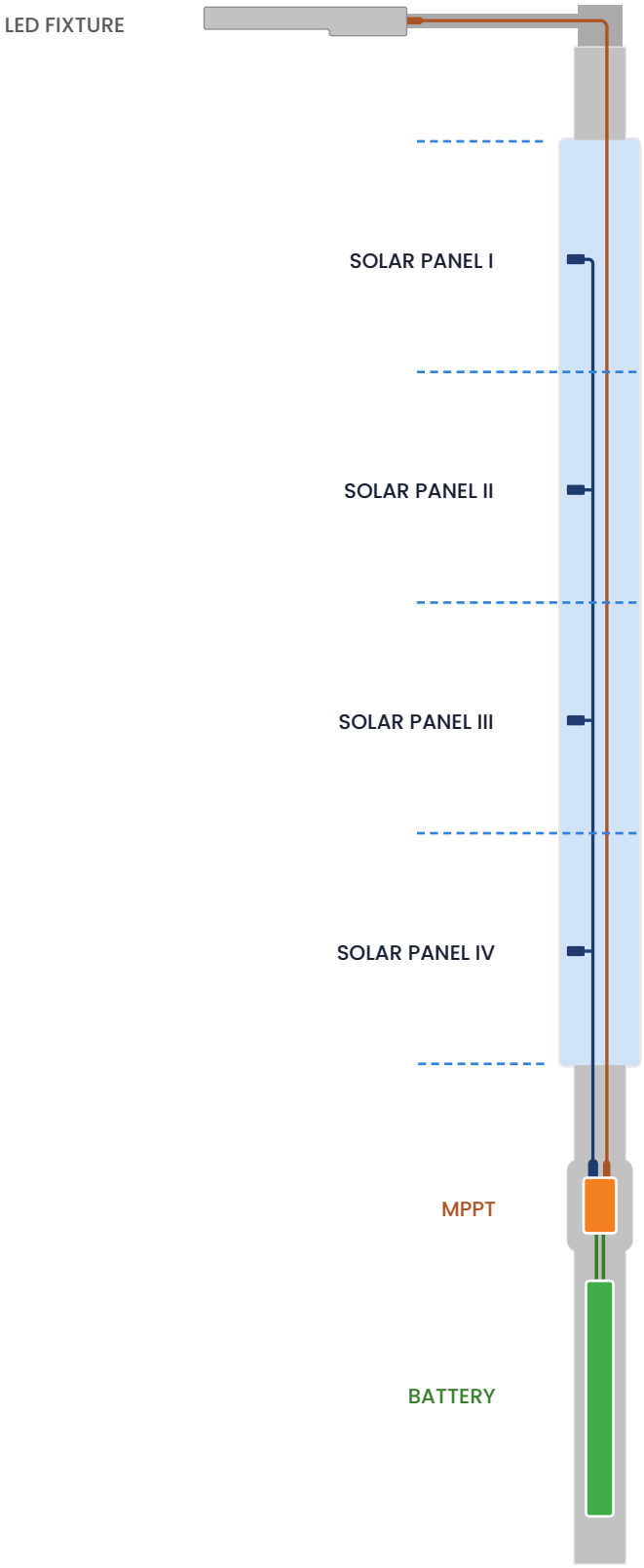
A streamlined housing profile reduces wind load and limits dust accumulation, supporting consistent thermal management and system efficiency. The integrated large-cavity design allows for internal placement of batteries and control components, optimizing space utilization while maintaining a clean, self-contained form factor.



HERA-APOLLO LED LUMINAIRE



WIRING DIAGRAM



ORDERING INFORMATION

SERIES	CONFIG	WATTAGE	CCT	OPTICS	FINISH	MOUNTING	OPTIONS
HERA	S (Single) D (Double)	20W 30W 40W 50W 60W 80W 100W	27K 30K 40K (Standard) 50K	T2 (Type II) T3 (Type III)	BLK (Black)	SF (Slip Fitter)	NONE (Standard) MOT (Motion Sensor) SMC (Smart Control) MON (Monitor)

Note: Recommended 30W/40W standard configurations.

EXAMPLE PART NUMBER HERA - S - 40W - 40K - T2 - BLK - SF - MON | 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.

DUVON LIGHTING LLC

710 ARMSTRONG DR. • BUFFALO GROVE, IL 60089

P: (224) 567-8312 E: SALES@360SOLARLIGHTING.COM WWW.360SOLARLIGHTING.COM