SMARTFLOWER DC POWERED BY Aimbridge ENERGY

SOLAR TRACKER DC POWER SYSTEM

Visible solar. Practical DC power.

SmartFlower DC combines the SmartFlower dual-axis solar tracker with Aimbridge Energy DC power electronics in an off-grid DC power system for outdoor infrastructure and public-facing sustainability projects.

The system delivers battery-supported DC power through up to three regulated output channels, with an optional bulk battery-bus output, optional PoE++, and an optional auxiliary PV input. It runs on an internal LFP battery or an external 48 V battery.



Product page & documents
aimbridgeenergy.com

2.5 kWp	11.4 kWh	12/24/48 VDC	3
SMARTFLOWER PV	OPTIONAL LFP STORAGE	REGULATED OUTPUTS	REGULATED OUTPUT CHANNELS

KEY FEATURES

- SmartFlower dual-axis tracking solar platform, 2.5 kWp
- Off-grid DC operation with an internal 11.4 kWh LFP battery or an external 48 V battery
- Up to 3 regulated DC output channels, each factory-set to 12, 24, or 48 VDC
- Optional 48 V bulk battery-bus output
- Optional weatherized PoE++ output
- Optional auxiliary MPPT input for up to 3,200 W of external PV
- Up to 10 DC branch circuit breakers, 1–35 A

TECHNICAL SPECIFICATIONS

Specifications are typical at 77 °F (25 °C), nominal input voltage, and rated load unless otherwise noted.

PV & POWER	
Operating mode	Off-grid only; battery required
SmartFlower nominal power	2.5 kWp
PV inputs	1 standard (SmartFlower); 2 with the auxiliary PV option
Charge controllers	Morningstar TriStar MPPT 600V (TS-MPPT-60-600V-48), one per PV input
Charge current	60 A max per charge controller
Auxiliary PV input	3,200 W nominal at 48 V
Auxiliary PV voltage	600 VDC maximum open-circuit; operating up to 525 VDC Voc
Auxiliary PV input current	15 A max (self-limiting)

DC OUTPUTS	
Regulated output voltages	12 VDC, 24 VDC, or 48 VDC[1]
Regulated output channels	Up to 3 independent channels[2]
Regulated output ratings	12 VDC / 720 W; 24 VDC / 960 W; 48 VDC / 1008 W per channel
Bulk DC output	48 V nominal battery bus[3]
PoE++ option	Optional weatherized PoE++ output
DC branch protection	Up to 10 branch circuit breakers, 1–35 A
DC/DC converters	Mean Well SD-1000L, one per regulated channel

1. Each channel is factory-configured to one voltage.
2. Channels are independent and are not intended for current sharing.
3. Bulk-output models only.
4. Sensor is installed outside the active tracker area.

INTERNAL BATTERY OPTION	
Battery model	3 × Briggs & Stratton SimpliPHI AmpliPHI 3.8-48
Capacity	11.4 kWh (3 × 3.8 kWh) at 100% DOD
Nominal voltage	51.2 VDC
Chemistry	Lithium iron phosphate (LFP)
Voltage range	48–56 VDC
Charge / discharge current	37.5 A continuous charge and discharge per battery; 100 A peak discharge per battery (10 min)
Charging temperature	32 to 120 °F (0 to 49 °C)

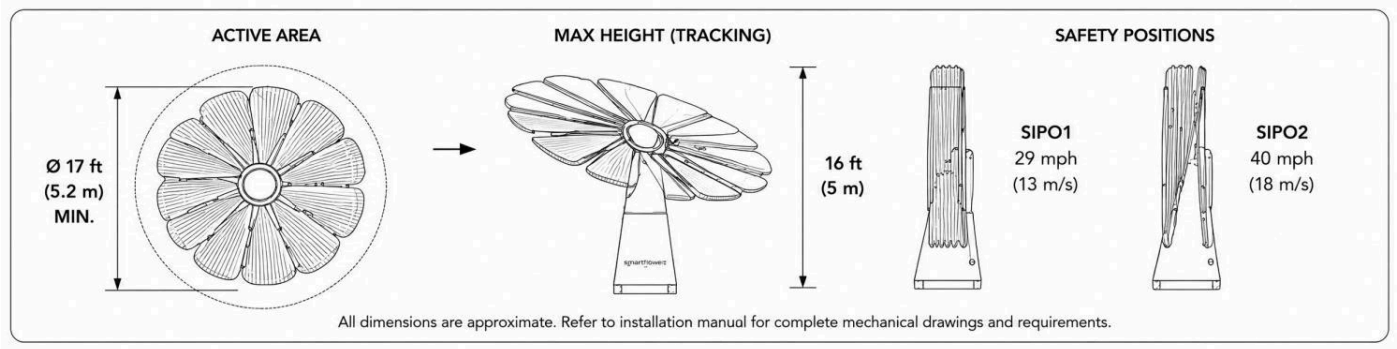
MECHANICAL & ENVIRONMENTAL	
Mounting	Four-point foundation attachment
Foundation options	Earth screws, concrete foundation, or pre-cast pad
Wind protection	Remote wind sensor; safety position 1 at 29 mph (13 m/s), the recommended setting; safety position 2 at 1.35 × the safety position 1 setting[4]
Enclosure	NEMA 3R
Operating temperature	−4 to +140 °F (−20 to +60 °C)

INTERFACES & COMMUNICATIONS

INTERFACE	TYPE / RATING	FUNCTION
PoE++ ports (option)	PoE++	Power and data for cameras, access points, and radios
Remote monitoring (option)	Available on request	Remote system monitoring

DIMENSIONS

ACTIVE AREA, HEIGHT & SAFETY POSITIONS



KEY DIMENSIONS & WEIGHTS	
Active area diameter	Ø 17 ft (5.2 m) minimum
Maximum height (tracking)	16 ft (5 m)
Weight	2,050–2,500 lb (930–1,134 kg), varies by configuration

ORDERING INFORMATION

Configured to each project's loads, battery, and outputs. Contact Aimbridge Energy for available configurations.

PART NUMBER	DESCRIPTION	RATING	DIMENSIONS (H × W × D)
016-3100-10	SmartFlower DC power system	2.5 kWp	Ø 17 ft × 16 ft

STANDARDS & COMPLIANCE

CATEGORY	EQUIPMENT / SCOPE	STANDARDS	STATUS
Safety	SmartFlower DC system	UL 1741	Pending
Safety	Regulated DC/DC converters	IEC 62368-1 CB, EN 62368-1, AS/NZS 62368.1	Certified
Battery / storage	Internal battery option	UL 1973 and UL 1642 components; UL 9540A tested	Listed

REVISION HISTORY

REV.	DATE	DESCRIPTION OF CHANGE
A	November 2026	Initial release.

Contact Aimbridge Energy for configurations, pricing, and availability.

W aimbridgeenergy.com E info@aimbridgeenergy.com T (888) 825-9001

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