

## Features

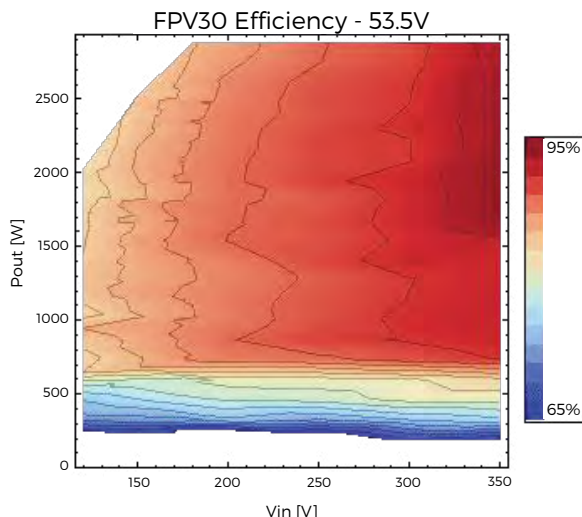
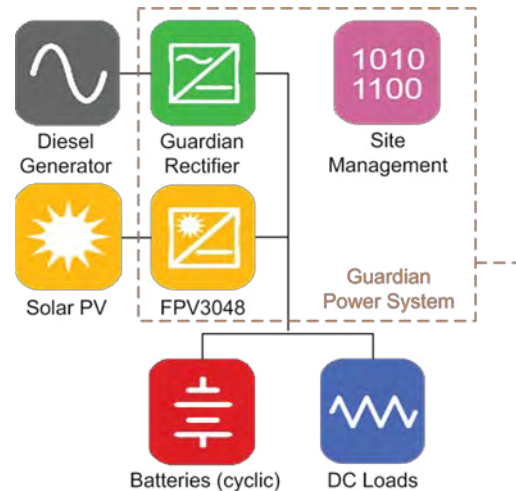
- True MPPT >99% energy harvest
- Auto-detection of PV array size
- 2.9kW output power
- Rugged input voltage from 130-360VDC
- 95% efficiency
- International standards compliance
- Thermal protection
- Modular design, interoperable with AC-DC rectifiers in Guardian Systems



## Description

The compact FPV30.48G 2.9kW 48VDC Solar PV Converter joins the ranks of the Guardian product family supporting up to 14.5kW solar arrays in a 1RU 23" shelf. Maximum energy harvest from the valuable photovoltaic (PV) array is accomplished through a >99% Maximum Power Point Tracking (MPPT) algorithm.

The FPV solar converter provides a modular building block for Renewable Energy and Hybrid sites and caters for a broad blend of CapEx, OpEx and ROI models. Accompanied by the Guardian Power System, indoor and outdoor enclosures and PV string combiners, UNIPOWER provides a total site solution across a wide range of challenging environments.



**SPECIFICATIONS**
**INPUT**

Voltage	Nominal MPPT: 130 – 345VDC (Safety approved input voltage range) Startup: 120VDC Shutdown: > 400VDC Derated Output Power: < 180VDC
Input Current (max.)	16Arms nominal, 17.6Arms max
Surge Immunity	EN61000-4-5

**OUTPUT**

Output Voltage	46-57.6VDC
Output Power	2900W @ 180-345VDC input, derating linearly to 2060W @ 130VDC input
Output Current	60A maximum
Efficiency	95% peak
Tolerance	Vout ±1.0%
Transient Response	±5% at load variation 10-90% or 90-10% recovery time 50ms
Load Sharing	MPPT unconstrained, otherwise <5% of nominal current
Ripple	<200mV p-p (BW 20MHz)
Psophomeric	<2mV, according to CCITT norms

**OTHER TECHNICAL DETAILS**

Protection	Short circuit proof, Automatic current limiting, Selective shutdown of modules at excessive output voltage, Thermal protection	
Alarms	High output voltage/ shutdown, Low voltage / module failure	
LED Indicators	Bicolour	Green ON: Power ON Red ON: Module failure / high output voltage/ shutdown
	Yellow	ON: Current limit, Thermal protection Blinking: Communication failure
Operating Temperature	-40°C to +65°C up to 2000m, Reduced spec -40°C to -20°C. Derate linearly from full power at 45°C to ~70% output power at ~74°C. Thermal shutdown at 75°C. For 3000m altitude derate by 5°C	
Storage Temperature	-60°C to +85°C	
Audible Noise	< 60 dBA	
MTBF	Telcordia SR-332, Issue 3: MIL-HDBK-217F-2:	450kh @ 25°C, with fan 273kh @ 25°C, with fan

**OTHER TECHNICAL DETAILS**

EMC	EN61000-6-2, EN61000-6-3, FCC Part 15 Class B, EN61000-6-2, EN 61000-6-4
Safety	UL/CSA 60950-1, 2nd Ed.   EN60950-1 2nd Ed.   IEC60950-1 2nd Ed.
Environment	Storage: ETS 300 019-2-1; Transport: ETS 300 019-2-2; Operation: ETS 300 019-2-3; Earthquake: GR 63 Core Zone 4

**MECHANICAL**

Dimensions, ins. (mm)	2.7 (107) W x 1.6 (40) H x 13.3 (337) D
Weight	4.4 lbs   2kg
Mounting	23in/1U subrack up to 5 modules, integrated with input distribution in rack including controller/rectifiers and load/battery distribution
Cooling	Fan cooled, speed controlled
Insulation	4.25kVDC primary-secondary; 2.12kVDC primary-ground; 0.10kVDC secondary-ground
Enclosure	IP20