

### Portable, Rugged High-efficiency Smart Charging and Power Power and Charge Radios, Sensors, End-user Devices, and Batteries



- **Efficient** 94 - 98% Solar charging and auxiliary power efficiency
- **Effective** High-speed maximum power point tracking delivers maximum solar charging power; Advanced charge controller minimizes charge time by charging two battery strings simultaneously
- **Compact and Lightweight** 4.7" x 2.7" x 1.4" | 0.75 lbs.
- **Durable** MIL-STD-810H compliant for use in harsh conditions and use cases
- **Simple** No buttons - just connect and charge!  
**New!** LCD indicates Output voltage selection, Battery State of Charge (SOC) & State of Health (SOH), Input Power (W), Time Until Charged, Faults, & more
- **Robust** Reverse Polarity, Over Temperature, Active Current Limiting  
Accepts up to 50V of DC power input; Wake-up mode revives depleted batteries enables charging if battery SMBus communication is lost  
Smartly balances imbalanced BB-2590 cells
- **Flexible** Pushbutton-selectable output voltage (11-17V or 22-34V) **New!**  
USB C with Power Delivery 3.0 (100W IN / 60W OUT) **New!**  
Parallel inputs and/or outputs for 1kW+ of output power  
Polarized SAE 2-pin input accepts power from DC sources  
Use with or without the battery attached  
Add X-90 Smart Adapters to charge many other battery types
- **Weatherproof** Dustproof and waterproof (up to 1 m immersion)



# Nishati Outpost™ X-90V5

## Nishati Outpost™ X-90V5 Specifications

General Description				
Part Number	92015			
Power Input Connection	(1) SAE 2-pin 4" pigtail			
Power Output Connection	(1) SAE 2-pin 4" pigtail			
Limited Warranty	2 years			
Power Characteristics	Min.	Typ.	Max.	Conditions
DC Input Voltage ( $V_{in}$ )	10V	-	50V	SAE IN connection
DC Input Voltage (USB $_{in}$ )	5V	-	20V	USB-C connection to USB PD 3.0 device
USB IN Current	0A	-	5A	
Input Power ( $P_i$ )	0	-	150W	
30V Auxiliary Power Voltage ( $V_{aux}$ )	22V	-	34V	
		28.8V		Without battery
15V Auxiliary Power Voltage ( $V_{aux}$ )	11V	-	17V	
		14.4V		Without battery
Total Batt. Charging Current ( $I_{batt}$ )	0A	-	8A	
Battery Charging Power ( $P_{batt}$ )	0	-	135W	
Auxiliary 30V Current ( $I_{HI}$ )	0A	-	3A	Continuous; Li-ion only
		-	5A	Peak w/battery only
Auxiliary 15V Current ( $I_{LO}$ )	0A	-	6A	Continuous; Li-ion only
		-	9A	Peak w/battery only
Auxiliary Power ( $P_{aux}$ )	-	-	150W	Continuous, $V_{aux} = 30V$ ; Li-ion only
		-	240W	Peak w/battery only, $V_{aux} = 30V$
USB Power (USB $_{out}$ )	0	-	100W	USB-C connection to USB PD 3.0 source
Efficiency: DC IN to Battery	-	97.5	-	$V_{in}=20V, V_{batt}=15V, I_o=4A$
	-	96.2	-	$V_{in}=40V, V_{batt}=15V, I_o=4A$
	-	96.0	-	$V_{in}=40V, V_{batt}=15V, I_o=8A^1$
Efficiency: Battery to Aux Power Out	-	94.75	-	$V_{batt}=16V, V_{aux}=15.5V, I_{aux}=4A$
	-	93.6	-	$V_{batt}=15V, V_{aux}=14.1V, I_{aux}=8A$
Ambient Operating Temp. ( $T_A$ )	-30°C	-	60°C	
Storage Temp. ( $T_{STG}$ )	-30°C	-	70°C	
Internal Temp. Limiting ( $T_{LIM}$ )	-	110°C	-	Auxiliary port turns off and battery charge power reduces to maintain temperature limit <sup>2</sup>
Charger Dimensions & Weight				
L x W x D	4.687" x 2.737" x 1.38"			
Weight	0.70 lbs.			
Environmental	IP67 (Dust proof; waterproof to 1m immersion)			

- 1) Charging a BB-2590/U Li-Ion battery with the rated maximum charging current
- 2) External case temperature can become very hot in certain high load conditions, use caution when handling

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