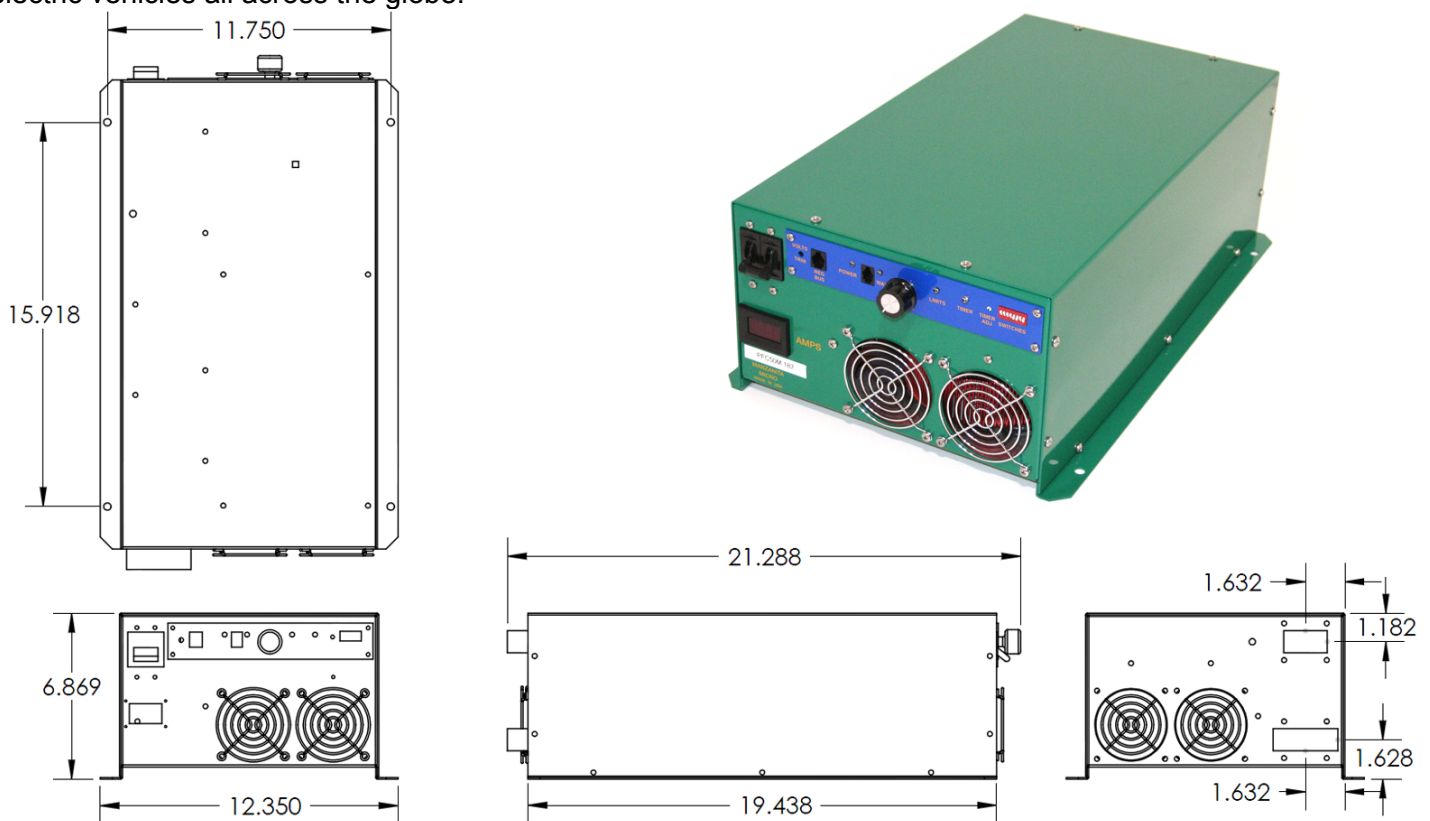


The Manzanita Micro PFC-50 and PFC-75 chargers share the same size enclosure. With a fully adjustable output voltage for battery packs from 12 to 450VDC and power levels of up to 18kW this is one of the smallest and most powerful battery charger solutions available.

There are no input voltage settings to change, simply plug into any AC wall outlet from 100 to 250 volts and 40 to 80 hertz. Current is easily adjustable allowing users to fine tune the unit to pull the maximum amount of amps from whatever outlet is available. Starting in 2011 all PFC-50 and PFC-75 chargers come standard with panel mount input and output connections and built-in digital input current meters allowing quick and precise amperage adjustments. The size, flexible input and output ranges and many user adjustable features make Manzanita Micro chargers an exceptional on or off-board charging solution and your electric vehicle should never encounter a single phase outlet it cannot use. It is no wonder Manzanita Micro chargers are used in electric vehicles all across the globe.



The PFC-50 and 75 series chargers weigh in at approximately 42 pounds (19 kg)
The outermost dimensions including foot flanges and front amps knob are approximately:
22" L x 12.5" W x 7" H (559mm x 318mm x 177mm) Allow at least 25" total length (635mm) to include cables
Input Voltage Range : 100 to 240VAC 40-80Hz computer grade pure sine wave
Output Voltage Range : 12 to 450VDC (+/- 1 volt)
Operating Temp Range : -20° F to +120° F (-28.8° C to +48.8° C)
Power Consumption : Up to 12.0kW ~ PFC-50 and PFC-50B / 18.0kW ~ PFC-75

The 50 in PFC-50 is indicative of the number of amps that the charger is rated to draw from the AC line. A PFC-75 can draw up to 75 amps. Unlike some other chargers, this is the rated continuous load and all units are thoroughly tested to their rated limits before leaving Manzanita Micro.



PFC-50/75

EV BATTERY
CHARGER

	PFC-50	PFC-50B	PFC-75
Input voltage range	100-250 Volts AC		
Line frequency	40-80 Hz		
Output voltage range	12-450 Volts DC		
Input current range	0.3 to 50 Amps AC	0.3 to 50 Amps AC	0.3 to 75 Amps AC
Standard output	0 to 50 Amps DC	0 to 75 Amps DC*	0 to 75 Amps DC
Output -buck enhanced	See PFC-50B Specs	0 to 75 Amps DC	0 to 75 Amps DC
Standby current	0.3 Amps DC	0.3 Amps DC	0.3 Amps DC
Air cooling path	In the back, out the front		
Cooling fan control	Thermostat controlled variable speed fans are standard features		
Input cable	#4 Welding Cable	#4 Welding Cable	#4 Welding Cable
Input connector	Anderson PP120	Anderson PP120	Anderson PP120
Output cable	#4 Welding Cable	#4 Welding Cable	#4 Welding Cable
Output connector	175 Amp Anderson Blue		
Input protection	50 amp 240 volt breaker	50 amp 240 volt breaker	75 amp 240 volt breaker
Output protection (stock)	100 amp 450 VDC stud mount fuse		150 amp 450 VDC stud mount fuse
Output protection (with buck enhancement)	100 amp 450 VDC stud mount fuse		150 amp 450 VDC stud mount fuse
Mounting bolt holes	4 each 5/16 inch		
Charger type	Switchmode PFC		
Topology	Two transistor flyback		
Isolation input to output	None, negative terminal of input bridge rectifier is connected to battery negative		
Charge algorithm	Constant current then constant voltage		
Current adjustment	Front panel knob		
Voltage adjustment	Front panel recessed 20 turn trimpot (20 volts per turn)		
Charge timer modes	NO timeout		
	Starts at Constant Current Stage		
	Starts at Constant Voltage Stage		
	Starts when first BMS unit commands it		
Charge timer settings	Zero to 150 minutes in 10 minute increments		
Switching frequency	20 kHz		
Power factor into 400V	Typically >.99		
Efficiency into 400V	Typically >90%		
Full power current ripple (peak to peak)	2X the average DC value		

*A buck enhanced PFC-50 is can move up to 75A into a low voltage pack. The more powerful PFC-75 can put 75A into higher voltage packs. Detailed power input and output graphs are available at: manzanitamicro.com