CCPF Capacitor Charging Power Supplies

The CCPF family of capacitor charging power supplies utilizes the latest innovations in power electronics to deliver clean and efficient power for pulsed laser applications. A high power resonant inverter insures reliability during all modes of operating conditions. A soft switching power factor circuit ensures near unity power factor with low EMI. CCPF models can drive both PF loads and reservoir charging circuits.

Leakage current is less than 300uA, power factor is greater than 0.99 and conducted emissions meet stringent European regulations. No additional line filter is required to meet EN EN55011 emission requirements.

The CCPF family has been designed with the knowledge that a high power pulsed laser is a rugged high voltage environment.

Lumina Power, INC.

Schulz Electronic
Professional Power Supplies

ADVANTAGES

- Ideal for OEM applications
- Power factor correction
- Compact size
- Low EMI
- Low leakage for medical apps

AVAILABLE POWER OUTPUTS:

- 500J/sec
- 1500J/sec
- 2000J/sec
- 4000J/sec
- 6000J/sec
- Output voltage to 15kV

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Shoebox Style	Poutmax	Voutmax	Input Voltage	Input Current	Size (L x W x H)	Wt
CCPF-500-XX	500J/sec	500V to 4kV	90-264VAC	5.5A @115VAC	9.13" x 6" x 3.7" 23.2 x 15.2 x 9.4 cm	4.5 lbs
CCPF-1500-XX	1500J/sec	500V to 4kV	90-264VAC	15A @115VAC	12.7" x 5.75" x 4.1" 32.3 x 14.6 x 10.4 cm	8 lbs
CCPF-2000-XX	2000J/sec	500V to 4kV	180-264VAC	11A @220VAC	12.7" x 5.75" x 4.1" 32.2 x 14.6 x 10.4 cm	8 lbs
CCPF-3500-XX	4000J/sec	500V to 4kV	180-264VAC	20A @220VAC	14.2" x 5.5" x 6" 36 x 13.4 x 15.2 cm	15 lbs
CCPF-1500-XX-SYS*	1500J/sec	500V to 4KV	180-264VAC	15A@220VAC	12.7" x 5.75" x 4.1" 32.3 x 14.6 x 10.4 cm	8 lbs

* Includes internal 150mA simmer supply and +24 auxiliary output

Chassis Style	Poutmax	Voutmax	Input Voltage	Input Current	Size	Wt
CCPF-2000-XX	2000J/sec	500V to 15kV	180-264VAC	11A @220VAC	16.5" x 17.3" x 3.7" 41.9 x 43.9 x 9.4 cm	20 lbs
CCPF-6000-XX	6000J/sec	500V to 4kV	180-264VAC	36A @220VAC	16.5" x 17.3" x 3.7" 41.9 x 43.9 x 9.4 cm	25 lbs

INPUT
Voltage: See table above
Current: See table above
Power Factor: >.98

OUTPUT
Power: See table above
Output Voltage: Configurable from 500V to 15kV.
Output Current: 2 * Poutmax/Voutmax
Polarity: Positive or Negative
Efficiency: >80% at full output
Regulation: 0.5% @100Hz

INTERFACE
Connector: 15 Pin "D" Sub Female
Voltage Program: 0-10V for 0-Max Voltage
Voltage Monitor: 0-10V for 0-Max Voltage
Inhibit/Reset
End of Charge Indication
Temperature Fault
Over-voltage Indication

ENVIRONMENT
Operating Temp: 0 to 40°C
Storage: -20 to 85°C
Humidity: 0 to 90% non-condensing
Cooling: Forced air

REGULATORY
Leakage Current: <300uA
Isolation: 4000VAC/5700VDC
EMI: EN55011
(depending upon Model)

Also available: CCHP-3800/6000
3Ø capacitor charging power supplies

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CCPF Series Pin Assignment					
Pin#	**500/4pin**	**500/15pin**	**1500/2000**	**3500**	**6000**
1	Inhibit				
2	GND	N/C		HV On	N/C
3	V Program	N/C	Overtemp		
4	N/C	GND	N/C		
5	N/C	VProgram			
6	N/C	N/C	Overvoltage		
7	N/C	V Peak Hold			
8	N/C	V Monitor			
9	N/C	+15V			
10	N/C	N/C			
11	N/C	N/C	+15V		
12	N/C	N/C			+15V
13	N/C	End Of Charge			
14, 15	N/C	GND			

In most cases interface configurations can be modified to conform to older capacitor charger models. Contact customer service if you are trying to replace RCS, CCS, LCS, LS, 5XX, 1XX, 57XX, 78XX or other models up to 8kj/sec.

Note: Non connected (N/C) pins should not be used or grounded.

TITLE/DESCRIPTION

INHIBIT/FAULT RESET- (INPUT)
This pin is the basic ON/OFF control pin for the power supply. Grounding this pin enables charging operation if all faults are clear. Applying +15V prevents the inverter from operating. Leaving Pin open will inhibit operation.(opposite option available)

FAULT WARNING - (OUTPUT)
When either the over-voltage fault pin, or the OVER-TEMP FAULT indicates a fault status, pin is pulled to GND through the collector of an NPN transistor. This transistor is rated at 30V, 100mA. When no fault is present, the output of this pin is connected to +15V through a 4.99K resistor. This fault can be cleared by applying +15V to INHIBIT/FAULT RESET function.

OVER-TEMP FAULT - (OUTPUT)
Indicates internal high temperature on main heat sink. When thermal switch closes due to excessive internal heat sink temperature this pin is pulled to GND through the collector of an NPN transistor. This transistor is rated at 30V, 100mA. When OVER-TEMP WARNING is tripped, unit will stop charging and will not begin charging again until the internal temperature drops to a safe value. When the unit is operating within safe temperatures, the output of this pin is connected to +15V through a 4.99K resistor. This fault can be cleared by applying +15V to INHIBIT/FAULT RESET function.

VOLTAGE PROGRAM- (INPUT)
Output is programmed externally with a 0 to +10V signal for 0 to 100% of rated output.

OVERVOLTAGE STATUS INDICATOR- (OUTPUT)
If the load becomes open circuited, the power supply will detect the fault and shut down instantaneously, protecting itself and other equipment from over-voltages. If this occurs the pin is pulled to GND through the collector of an NPN transistor. This transistor is rated at 30V, 100mA. To restart, a capacitor load must be connected to the output and AC power must be turned OFF and ON again. When an appropriate load is connected to the output, the output of this pin is connected to +15V through a 4.99K resistor. This fault can be cleared by applying +15V to INHIBIT/FAULT RESET function.

VOUT PEAK HOLD- (OUTPUT)
Monitors output voltage with a peak hold circuit. The time constant of the peak hold circuit is approximately 5 seconds. 0 to +10V for 0 to 100% of rated output voltage.

VOUT MONITOR- (OUTPUT)
Monitors output voltage. 0 to +10V for 0 to 100% of rated output voltage.

+15V (OUTPUT)
Maximum output current is 100mA.

END OF CHARGE STATUS INDICATOR-(OUTPUT)
When the load capacitor reaches the programmed voltage this pin is pulled to GND through the collector of an NPN transistor. This transistor is rated at 30V, 100mA. While the load capacitor is being charged to the programmed voltage, the output of this pin is +15V through a 10kΩ resistor. Pin will oscillate from high to low as the power supply replaces charge that is bled through the feedback network.

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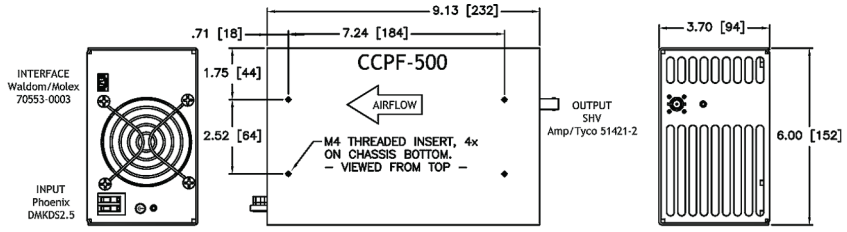
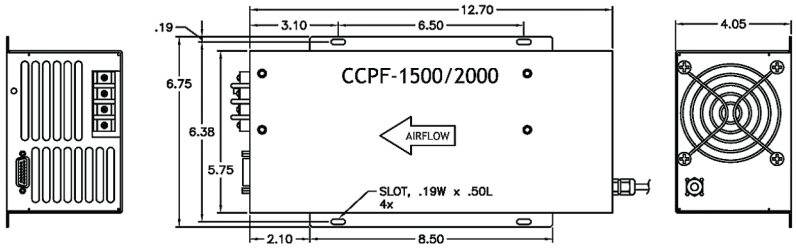
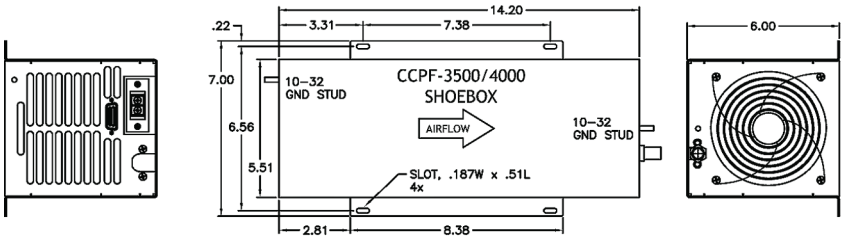
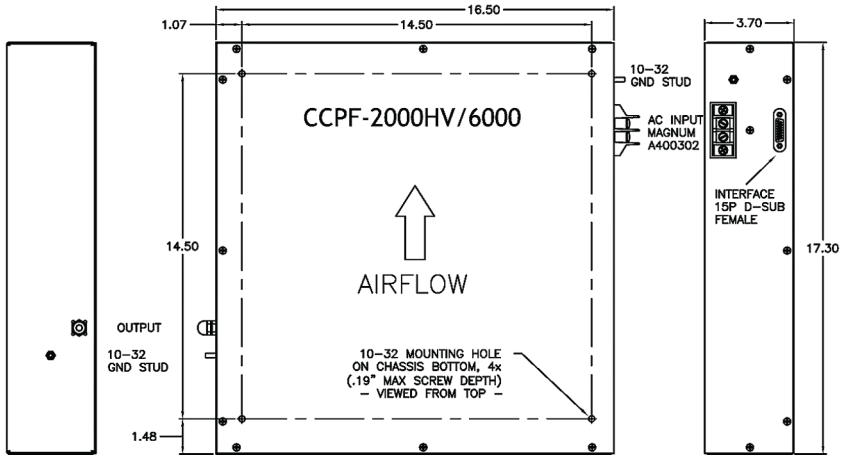
Outline Drawings









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