

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.



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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

REGULATORY

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

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



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)

OVER-TEMP FAULT - (OUTPUT)

Indicates an internal high temperature condition.

When an over temperature fault occurs, the signal is pulled either to GND or 15V/5V based on specific customers' requirement. Please refer to the test data sheet for a specific power supply to see how that unit is configured.

A N/O (a N/C switch is available) thermal switch closes during an over temperature condition. Under normal temperature conditions, the over temperature output is pulled to 15V via a 4.99k resistor.

For a 5V interface, a 2.49k resistor is in parallel with the thermal switch.

The thermal switch will reset itself when the temperature has been reduced by approximately 20°C.

VOLTAGE PROGRAM- (INPUT)

Output is programmed externally with a 0 to +10V signal for 0 to 100% of rated output. **Note: Accuracy and linearity will be compromised when operating below 20% of the maximum value.**

OVERVOLTAGE / OVERLOAD / NO LOAD STATUS INDICATOR-(OUTPUT)

When the output is open or shorted circuited, or if the capacitor can't be fully charged to the programmed level in a given time, the Over-Load Fault will latch Low and the power supply will shut down to protect itself. Typically, it is 15V at an open collector with a 4.99k pull up during normal operation. To Clear the Fault: Correct the problem at the load and toggle the Inhibit signal or recycle the AC input.

VOULT 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.

VOULT 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 (EOC) - (OUTPUT)

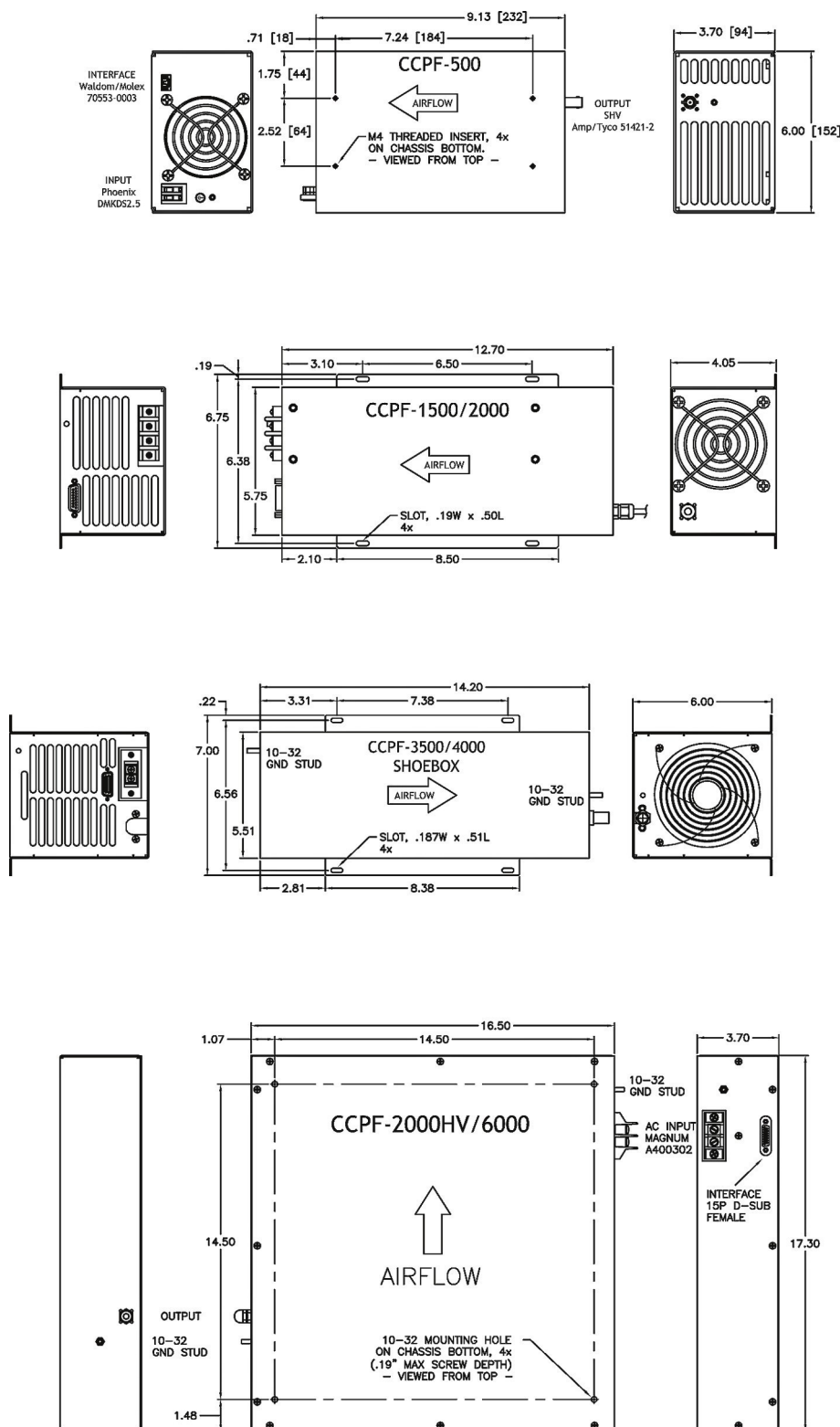
When the load capacitor is fully charged to the programmed level, the EOC signal will go Low thru an NPN transistor. The signal is Normally High via a 4.99k pulled up to 15V.

The EOC signal will toggle when the power supply is refreshing the load cap.

Latched EOC is optional: The EOC signal will latch Low when the capacitor is fully charged and stays Low until the cap is discharged and the Inhibit signal is asserted.

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Outline Drawings



Lumina Power reserves the right to change the specifications of this product without notice or liability. Contact customer service for latest specifications.

