



a.l.e. systems, inc.



The 102 Series high voltage switching power supplies are designed to quickly charge capacitors and pulse forming networks. Advanced technology combined with high quality construction yield an exceptionally small and reliable power supply. With many standard features and options, the series is useful in a wide variety of OEM and laboratory applications. Designed for continuous use in severe electrical environments, these power supplies provide an average charging rate to 1.5kJ/s over output voltage ranges from 1kV to 40kV, positive or negative polarity. Output control and status monitoring are easily accomplished with the standard remote interface.

Output Voltages

1kV to 40kV in the following ranges:
0-1,2,5,10,20,30,40

Charge Rate

102	102F
1kJ/s	1.5 kJ/s average
1.1kJ/s	1.65 kJ/s peak



$$\text{Peak charge rate} = \frac{1/2 CV_p^2}{t_p}$$

$$\text{Average charge rate} = \frac{1/2 CV_p^2}{t_p}$$

Configurations

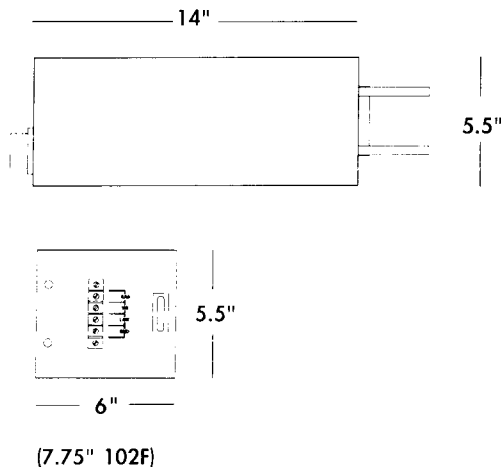
102

For use on low power OEM applications where reduced size and weight are important design requirements. Unit is designed with high EMI-RFI shielding for direct mounting in close proximity to laser discharge. Control via 15 pin connector for output voltage, inhibit, output waveform and peak detector as well as open collector outputs for end of charge, over-voltage, thermal overload, internal breaker open and output overload.

102F

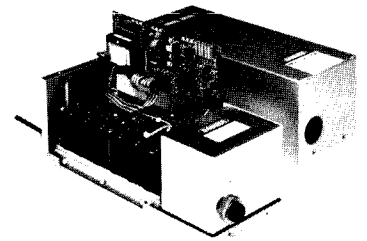
Same features above with fan for additional cooling. Water/air cooling combinations increase 102F output power to 1500J/s. The 102F can be ordered without water cooling with a derated output power of 700J/s.

102 Configuration



HIGH VOLTAGE POWER SUPPLIES

MODEL 102



CAPACITOR CHARGING POWER SUPPLY

- 1650J/S PEAK CHARGE RATE
- COMPACT LIGHTWEIGHT DESIGN
- FULLY ADJUSTABLE OUTPUT VOLTAGE
- HIGH EMI/RFI IMMUNITY
- WIDE INPUT VOLTAGE RANGE
- LOW STORED ENERGY
- PROTECTED AGAINST SHORT CIRCUIT, ARC, OVER-TEMP, OVER-VOLTAGE
- VERSATILE OEM PACKAGE



HIGH VOLTAGE POWER SUPPLIES

102 Specifications

Output Voltage/ Current

0-1 kV	2.2 A
0-2 kV	1.1 A
0-5 kV	440 mA
0-10 kV	220 mA
0-20 kV	110 mA
0-30 kV	74 mA
0-40 kV	55 mA

Polarity

Positive or negative

Charge Rate

102

1.0 kJ/s avg

1.1 kJ/s peak

102F

1.5 kJ/s avg

1.65 kJ/s peak

Regulation

±1% to 100Hz

±1% ripple

Efficiency

85% minimum

Input Voltage

90-140 VAC, 50/60 Hz,

180-280 VAC, 50/60 Hz,

single phase

Inrush Current

Limited to below full power current

Protection

Short circuit, arc, over-temp, over-voltage, highly buffered I/O

Cooling

102

Water cooled, 0.2 gallon per minute at full rated power

102F

Water and air cooled

Water: 0.2 gallon per minute at full power

Air: -20°C to 40°C, 10% to 90% RH non-condensing

Size

6" Wide

5.5" High

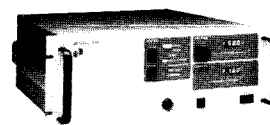
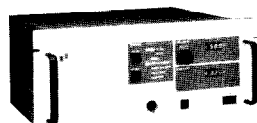
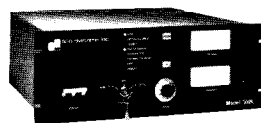
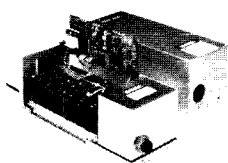
14" Deep

Weight

19lbs., 8.8 kg

Capacitor Charging Power Supplies 1KJ/S to 15KJ/S

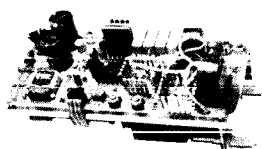
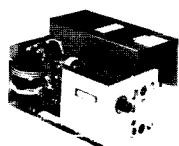
Advanced high voltage current sources specifically designed to charge capacitors in discharge driven applications.



CO₂

Ballastless CO₂ Supplies 250W to 1000W

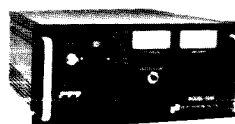
Patented converter topology provides controlled current for striking and sustaining CW CO₂ lasers.



4060

Precision High Power HVDC Supplies 2KW to 20KW

Highly regulated HVDC supplies for ion implantation, X-ray and other demanding high power applications.



YAG DRIVE & OEM CW Arc Lamp Supplies 4KW to 8KW

Current source supplies for igniting and running high pressure krypton arc lamps.

