



## 8500 Series

### Wide-Bandwidth, High-Power Switch-Mode Amplifiers

AE Techron's **8500 Series** amplifiers are 400Vp, low-noise, DC-to-50 kHz switch-mode amplifiers. The 8500 series provides a unique combination of switch-mode and linear amplifiers. Switch-mode efficiency is combined with a low noise floor and THD, while also benefitting from high slew rates and wide bandwidth. The 8500 series is also able to safely drive both reactive and resistive loads of varying impedances with no loss in rated output power.

8500 series amplifiers pack a lot of power into a small package. They are able to produce surge power ratings at up to 2.5X continuous and process apparent power at levels up to 5X the continuous power ratings. This makes an 8500 series amplifier an ideal choice for many difficult-to-drive reactive loads.

This combination of features makes the 8500 series an ideal solution for a wide range of high-current, low-voltage applications that require both DC power and quick surges or drop-outs, like those found in conducted immunity testing of DC-powered systems in the automotive and aviation markets.

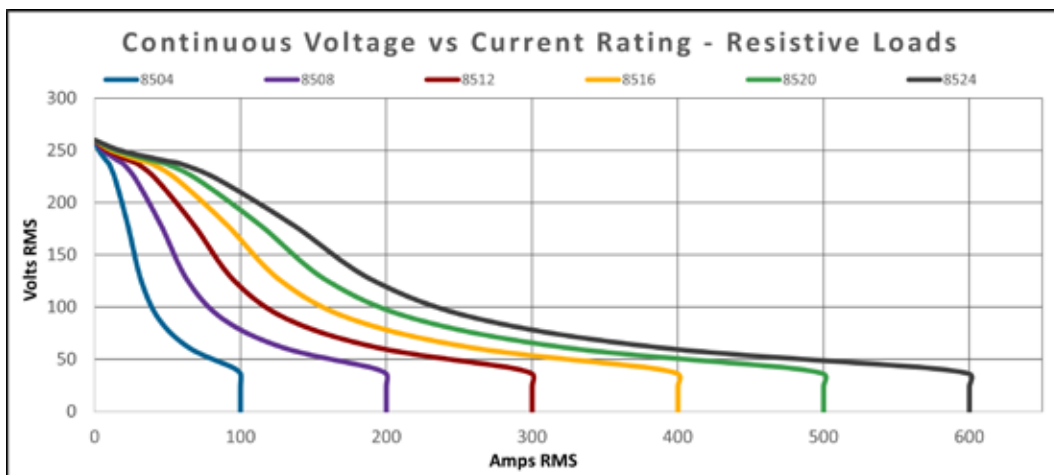
### Performance Overview:

- Bandwidth:** DC to 50 kHz
- Slew Rate:** Up to 80V/ $\mu$ s
- Voltage:** 0 to 250 V<sub>RMS</sub>  
0 to 350 VDC
- Current:** Up to 80 to 480 A<sub>RMS</sub>\*
- Distortion:** <0.2%
- Power:** 4 kW to 24 kW\*

**Power levels up to 5X rated power  
when driving reactive loads**

**Drives loads PF 0 to 1**

*\*Models available with output power from 4 kW to 24 kW (capable of up to 120 kVA).*



## Specifications

### 8504

**Maximum Continuous Output Current:** 80A<sub>RMS</sub>  
**Surge Rating:** 2X power at up to 400 V<sub>P</sub> or 150A  
**Apparent Power Rating:** Up to 5X continuous power rating at up to 400 V<sub>P</sub> or 150A  
**Supply Voltage:** Single-phase, 208V ±10%, 30A, 50/60 Hz; 230V/240V ±10%, 30A version available  
**Source Impedance:** 3 mΩ + 3 μH  
**Dimensions (HxWxD):** 5.25 x 19.0 x 25.26 in. (13.34 x 48.26 x 64.16 cm)  
**Weight:** Approximately 84 lbs. (38.1 kg)

### 8508

**Maximum Continuous Output Current:** 160A<sub>RMS</sub>  
**Surge Rating:** 2X power at up to 400 V<sub>P</sub> or 300A  
**Apparent Power Rating:** Up to 5X continuous power rating at up to 400 V<sub>P</sub> or 300A  
**Supply Voltage:** Three-phase 208V ±10%, 30A, 50/60 Hz; 400V ±10%, 30A version available  
**Source Impedance:** less than 70 mΩ + less than 10 μH  
**Dimensions (HxWxD):** 35.05 x 22.56 x 31.56 in. (89.03 x 57.3 x 80.16 cm)  
**Weight:** Approximately 290 lbs. (131.5 kg)

### 8512

**Maximum Continuous Output Current:** 240A<sub>RMS</sub>  
**Surge Rating:** 2X power at up to 400 V<sub>P</sub> or 450A  
**Apparent Power Rating:** Up to 5X continuous power rating at up to 400 V<sub>P</sub> or 450A  
**Supply Voltage:** Three-phase 208V ±10%, 30A, 50/60 Hz; 400V ±10%, 30A version available  
**Source Impedance:** less than 60 mΩ + less than 10 μH  
**Dimensions (HxWxD):** 35.05 x 22.56 x 31.56 in. (89.03 x 57.3 x 80.16 cm)  
**Weight:** Approximately 370 lbs. (167.8 kg)

### 8516

**Maximum Continuous Output Current:** 320A<sub>RMS</sub>  
**Surge Rating:** 2X power at up to 400 V<sub>P</sub> or 600A  
**Apparent Power Rating:** Up to 5X continuous power rating at up to 400 V<sub>P</sub> or 600A  
**Supply Voltage:** Three-phase 208V ±10%, 60A, 50/60 Hz; 400V ±10%, 60A version available  
**Source Impedance:** less than 50 mΩ + less than 10 μH  
**Dimensions (HxWxD):** 48.55 x 22.56 x 31.56 inches (123.32 x 57.3 x 80.16 cm)  
**Weight:** Approximately 460 lbs. (208.7 kg)

### 8520

**Maximum Continuous Output Current:** 400A<sub>RMS</sub>  
**Surge Rating:** 2X power at up to 400 V<sub>P</sub> or 750A  
**Apparent Power Rating:** Up to 5X continuous power rating at up to 400 V<sub>P</sub> or 750A  
**Supply Voltage:** Three-phase 208V ±10%, 60A, 50/60 Hz; 400V ±10%, 60A version available  
**Source Impedance:** less than 40 mΩ + less than 10 μH  
**Dimensions (HxWxD):** 48.55 x 22.56 x 31.56 inches (123.32 x 57.3 x 80.16 cm)  
**Weight:** Approximately 540 lbs. (244.9 kg)

### 8524

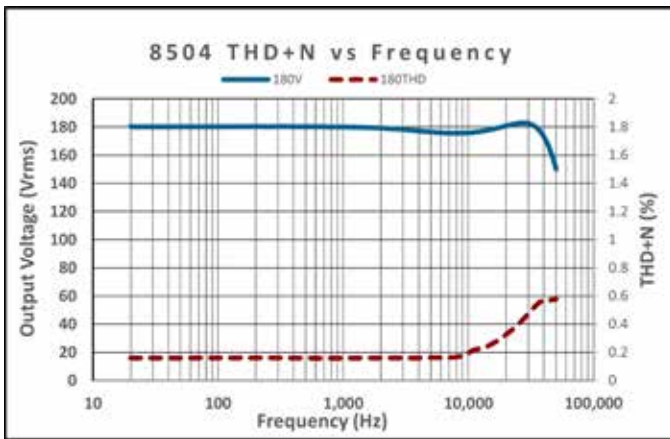
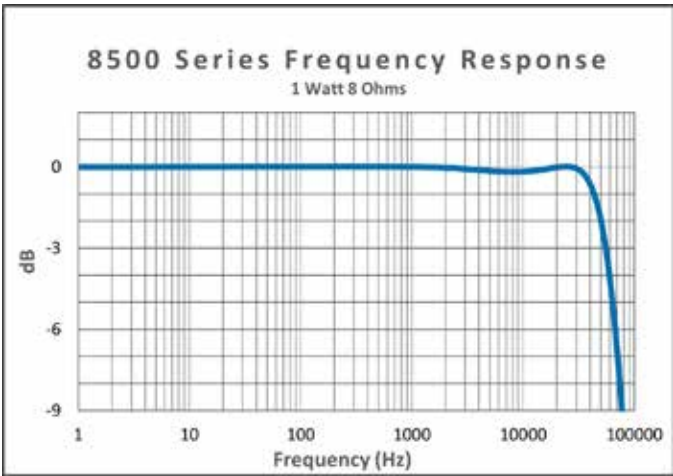
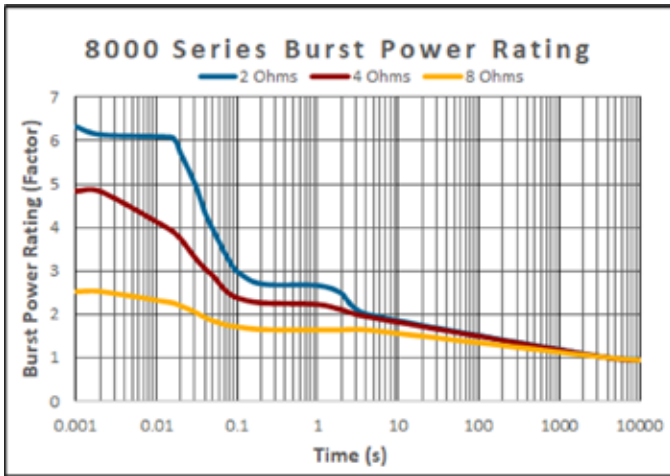
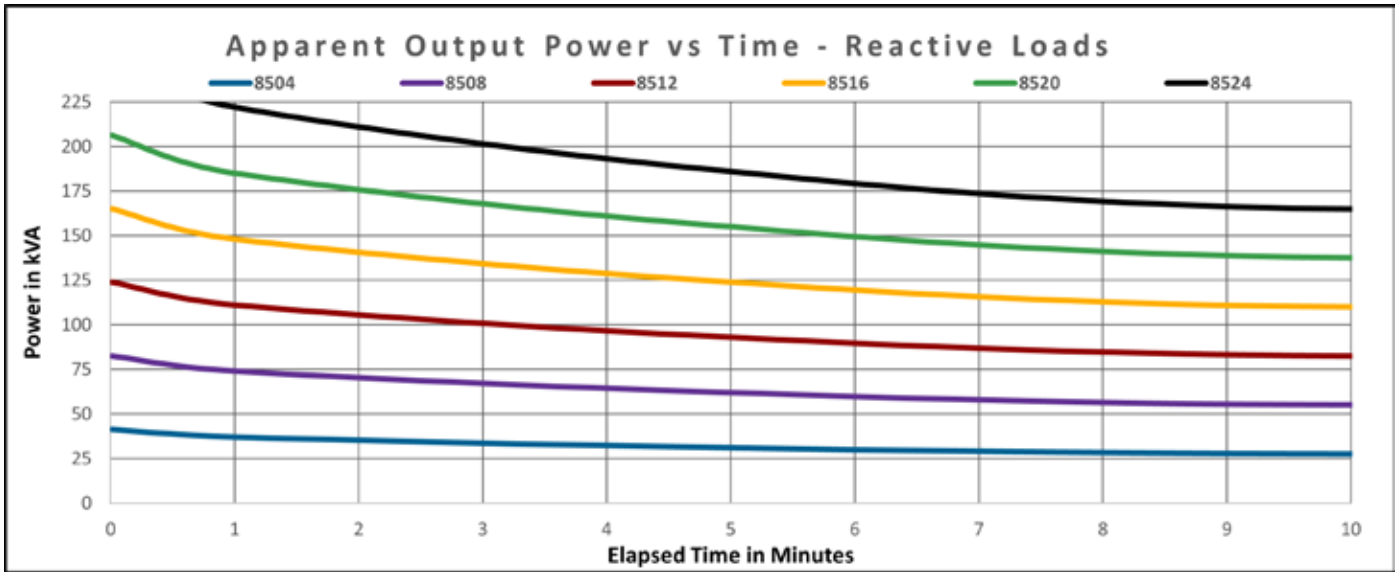
**Maximum Continuous Output Current:** 480A<sub>RMS</sub>  
**Surge Rating:** 2X power at up to 400 V<sub>P</sub> or 900A  
**Apparent Power Rating:** Up to 5X continuous power rating at up to 400 V<sub>P</sub> or 900A  
**Supply Voltage:** Three-phase 208V ±10%, 60A, 50/60 Hz; 400V ±10%, 60A version available  
**Source Impedance:** less than 30 mΩ + less than 10 μH  
**Dimensions (HxWxD):** 48.55 x 22.56 x 31.56 inches (123.32 x 57.3 x 80.16 cm)  
**Weight:** Approximately 620 lbs. (281.2 kg)

Note: 8508, 8512, 8516, 8520 and 8524 model dimensions and weights are subject to change.

### Continuous Output Current

	8504	8508	8512	8516	8520	8524
13.5 VDC	80A	160A	240A	320A	400A	480A
24 VDC	80A	160A	240A	320A	400A	480A
48 VDC	75A	150A	225A	300A	375A	425A
60 VAC	60A	120A	180A	240A	300A	360A
120 VAC	32A	64A	96A	128A	160A	192A
230 VAC	10A	20A	30A	40A	50A	60A

8504 power ratings shown are for 240V units. At output voltages above 90VAC, units configured for 120VAC mains input may be breaker-limited. Contact AE Techron for 120VAC performance ratings. Performance data is for a purely resistive load; performance will be improved into loads that are partially or completely reactive.



## Common Data (all models)

**Operating Modes:** AC, DC and AC + DC

**Frequency, AC Mode Output (-3 dB):** DC - 50 kHz

**Max Voltage Ranges (no load),**

**AC:** 0 - 260 V<sub>RMS</sub>

**AC + DC:** 0 - ±400 V<sub>p</sub>

**Load Regulation (full scale):** <0.025%, DC to 100 Hz;  
<0.05%, 10 Hz to 10 kHz

**Line Regulation (full scale):** <0.1% for 10% line change

**External Sense:** Voltage-drop compensation sense line

**Harmonic Distortion (80 kHz, low-passed):** Less than 0.3%  
from 10 Hz to 30 kHz; 0.5% up to 50 kHz

**Harmonic Distortion (30 kHz, low-passed):** Less than 0.1%  
from 10 Hz to 50 kHz

**DC Offset:** <10 mV

**Distortion:** <0.2%

**Voltage Slew Rate:** Load dependent; up to 80V per  $\mu$ s,  
typically 10  $\mu$ s to 30  $\mu$ s for 10% to 90% of full-scale change,  
depending on load and power

**Propagation Delay:** 8  $\mu$ sec

**Efficiency:** 85%, typical

**Power Factor:** .72, typical

**Cooling:** Internal forced-air fans

**Protection:** Over/under voltage, over current,  
over temperature

**Input, Signal In:** BNC connector (unbalanced);  
terminal strip (balanced)

**Output:** 3/8-inch high-current post connectors

**Operating Environment,**

**Temperature:** 5 °C to 50 °C (41 °F to 122 °F);

Maximum output power de-rated above 30 °C (86 °F)

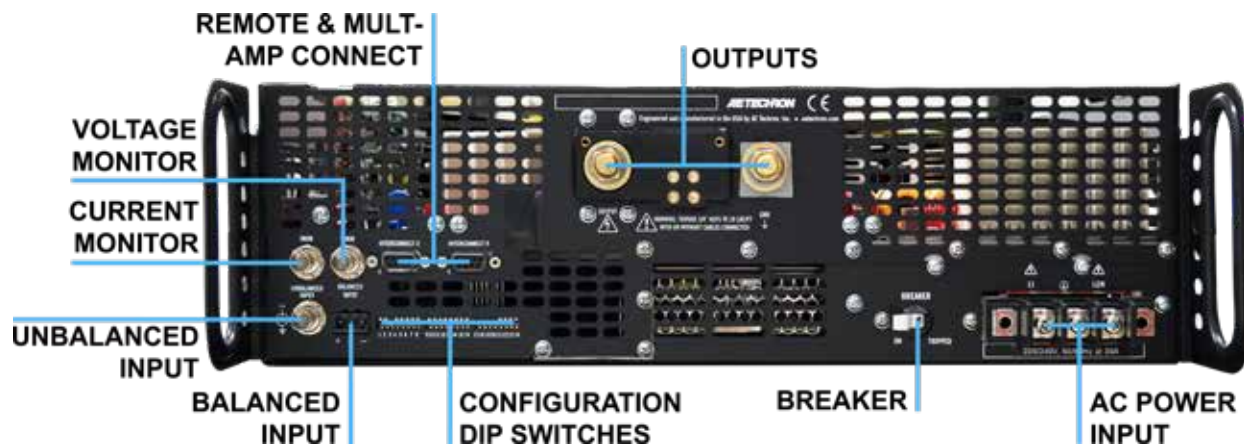
**Humidity:** Maximum relative humidity 80% for  
temperatures up to 31 °C decreasing linearly to 50%  
relative humidity at 40 °C

**Altitude:** 3000 m Maximum

**Environment:** Indoor Use Only, Pollution degree 2

**Equipment Class:** Group 1 Class A

**Transient Overvoltage:** Overvoltage Category II



*Please note that the handles are not to be used for carrying the amplifier and only lift the device using a two-person technique.*

*AE Techron Sales Representative*