

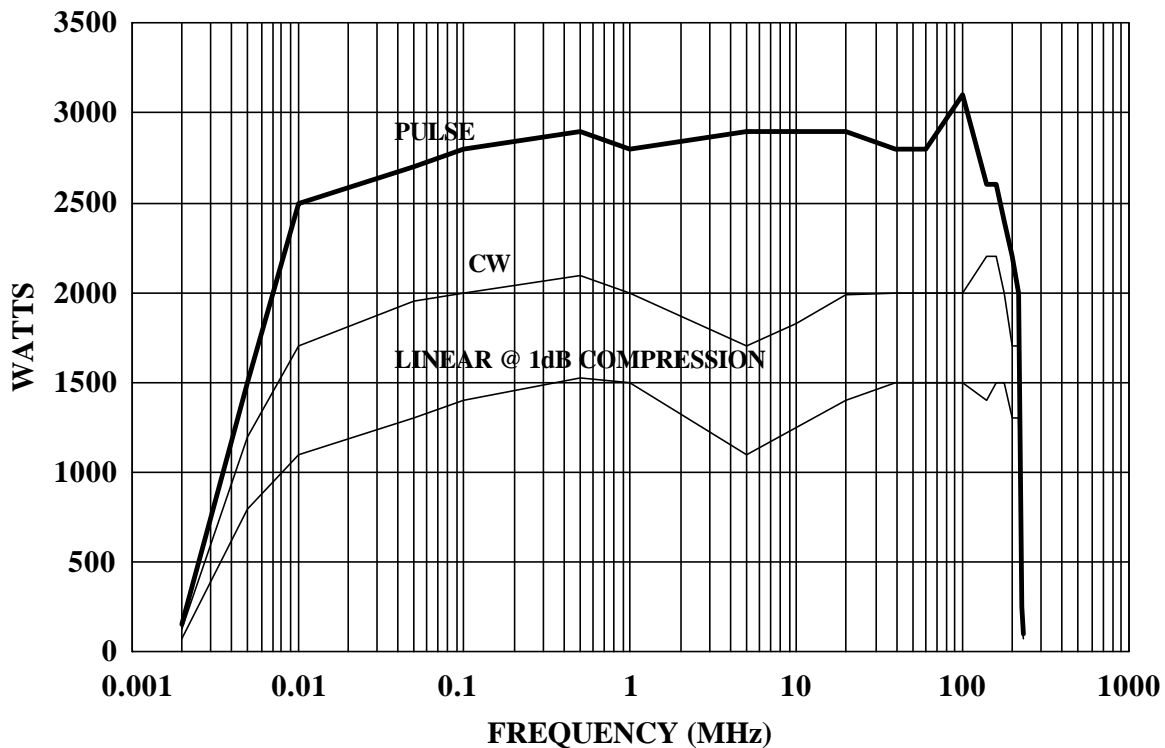


160 School House Road, Souderton, PA 18964-9990 USA
Phone 215-723-8181 • FAX 215-723-5688

MODEL 1000L
1200 WATTS CW
2500 WATTS PULSE
10kHz-220 MHz

The Model 1000L is an economical, self-contained, air-cooled broadband amplifier designed for laboratory applications that require instantaneous bandwidth, high gain and high power output. Housed in a stylish contemporary enclosure, the Model 1000L is smaller than competitive units with similar power levels. All operating controls are functionally grouped on the front panel for simplicity of operation. These include modern, lighted push-button switches for the command functions, POWER, STANDBY, OPERATE and PULSE, a control for setting the output level of the amplifier, and a meter for monitoring critical operating voltages and currents. Remote control is provided through a rear panel mounted connector. Isolated TTL level remote control can be accomplished using our CP2001 interface. Isolated IEEE-488 compatible control can be provided with our CP3000. A highly versatile unit, the Model 1000L features rugged circuitry and a quick-acting, solid state crowbar circuit to protect the final amplifier tubes from damage due to internal arcing. An electronic circuit is provided to enable rapid gating or blanking of the amplifier.

1000L TYPICAL POWER OUTPUT



SPECIFICATIONS

Model 1000L

POWER OUTPUT

High Range

Pulse

Minimum 2500 watts to 150MHz
1750 watts to 220MHz

Duty Cycle 15%

Pulse Width..... 8 milliseconds

CW

Minimum 1200 watts

Low Range 100 watts nominal

FLATNESS, high range ± 1.5 dB

FREQUENCY RESPONSE..... 10 kHz - 220 MHz instantaneously

INPUT FOR RATED OUTPUT 1.0 milliwatt maximum

GAIN (at maximum setting)

High Range..... 61 dB minimum

Low Range..... 47 dB minimum

GAIN ADJUSTMENT (continuous range)..... 18 dB minimum

INPUT IMPEDANCE..... 50 ohms, VSWR 1.5:1 maximum

OUTPUT IMPEDANCE..... 50 ohms, nominal

MISMATCH TOLERANCE* 100% of rated power without foldback. Will operate without damage, or oscillation with any magnitude and phase of source and load impedance.

MODULATION CAPABILITY Linear amplitude and phase response to over 80 MHz allows faithful reproduction of AM, FM, Pulse, or phase modulation appearing on the input signal

HARMONIC DISTORTION AT 750 WATTS

Above 120 MHz..... Minus 30 dBc maximum

Below 120 MHz..... Minus 15 dBc maximum

Minus 18 dBc nominal

THIRD ORDER INTERCEPT POINT..... 66dBm Typical

GATING CHARACTERISTICS

Pulse Mode Pedestal/CW Mode Blanking

Signal (into 180 ohms)..... Plus or minus 2.5 to 6.0 VDC

Rise time..... 20 microseconds maximum

Fall time 4 microseconds maximum

RF Rise/Fall Time..... 10 nanoseconds maximum

RF Pulse Droop 1.0% maximum at 8 milliseconds

PRIMARY POWER (specify one)..... 200/208 $\pm 5\%$ VAC, 3 phase, 50/60 Hz
380/415 $\pm 5\%$ VAC, 3 phase, 50/60 Hz
400/415 $\pm 5\%$ VAC, 3 phase, 50/60Hz
15.2 kVA nominal

CONNECTORS

RF Input Type BNC female

RF Output, high range..... Type C female

RF Output, low range..... Type N female

Gating/Blanking Type BNC female

Remote Control 25 pin female subminiature D

COOLING..... Forced air (self contained fans)

WEIGHT..... 239 kg (525 lb)

SIZE (WxHxD) 56.1 x 149.9 x 58.4 cm
22.1 x 59.0 x 23.0 in

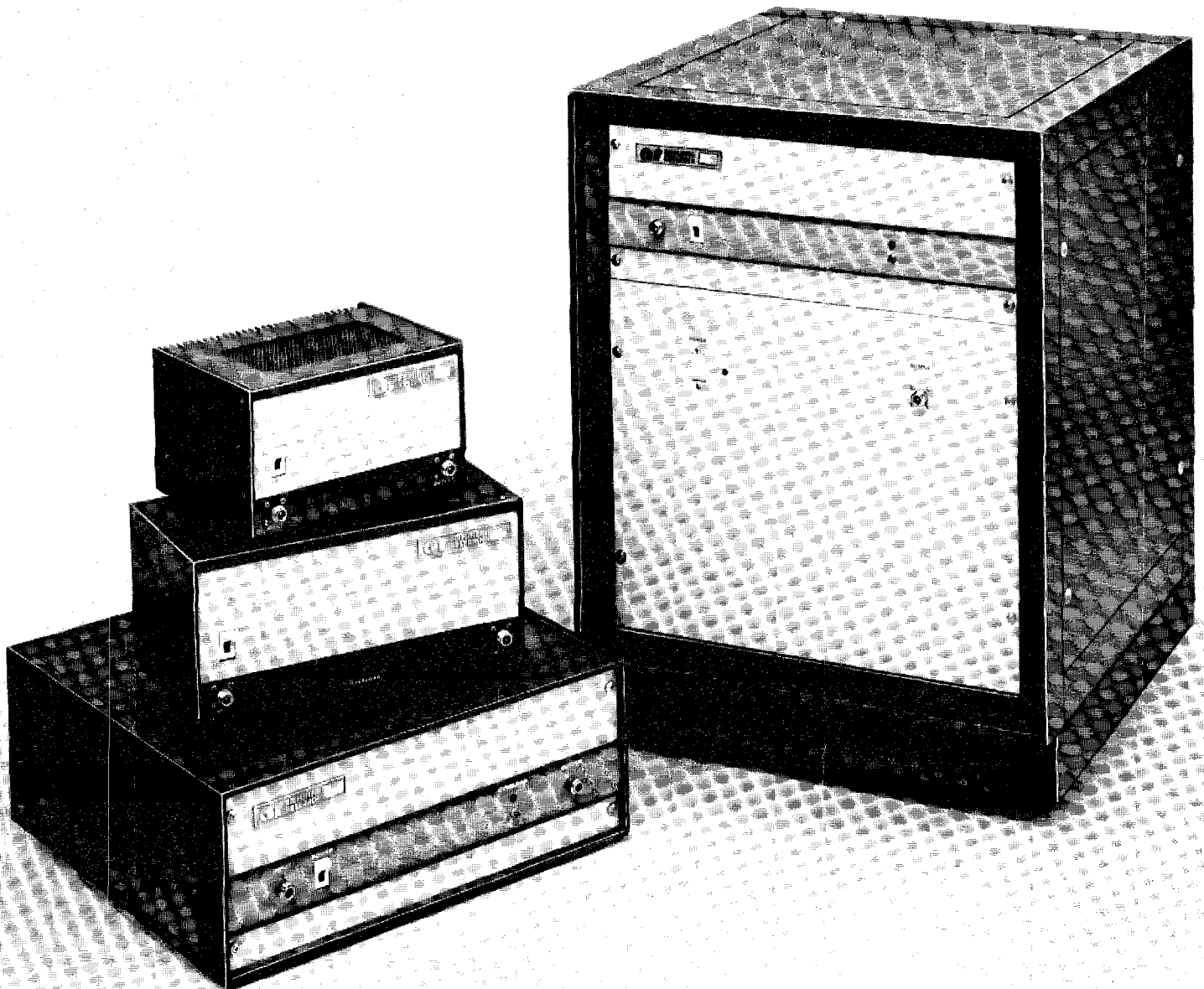
* See Application Note #27



**AMPLIFIER
RESEARCH**

160 School House Road, Souderton, PA 18964-9990 USA
TEL 215-723-8181 • TWX 510-661-6094 • FAX 215-723-5688

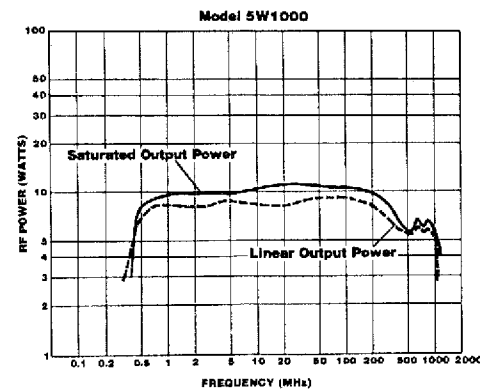
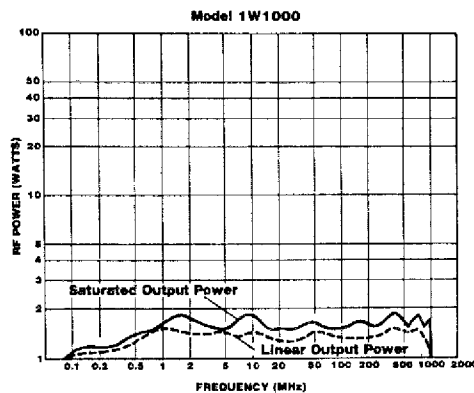
**"W" Series
ULTRA-BROADBAND
RF POWER AMPLIFIERS**



Specifications

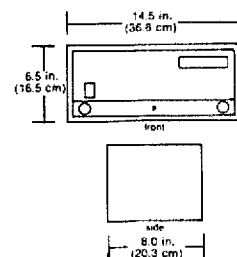
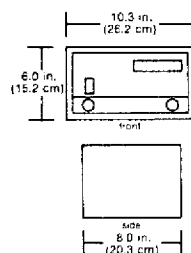
	1W1000	5W1000
Power output, cw up to minimum	2 watts 1 watt	9 watts 5 watts
Power output, cw linear (less than 1 dB compression into 50 ohms)	1 watt minimum	5 watts minimum
Flatness	± 1.0 dB maximum; ± 0.5 dB typical	± 1.5 dB maximum; ± 1.0 dB typical
Frequency response	100 kHz to 1000 MHz	500 kHz to 1000 MHz
Input for rated output	1.0 milliwatt max.	1.0 milliwatt max.
Power gain	30 dB minimum	37 dB minimum
Input impedance	50 ohms; VSWR 2:1 max.	50 ohms; VSWR 2:1 max.
Output impedance	50 ohms; VSWR 2.5:1 max.	50 ohms nominal
Mismatch tolerance	100%	100%
(ability to operate without damage, foldback, or oscillation with any magnitude and phase of source and load impedance)		
Modulation capability	100%	100%
(ability to reproduce faithfully AM, FM, or pulse modulation appearing on input signal)		
Noise Figure	8 dB typical	10 dB typical
Harmonic distortion	Minus 20 dBc max. at 1 watt.	Minus 20 dBc max. at 5 watts.
Third-order intercept point	42 dBm typical	48 dBm typical
Primary power	100/110/120/200/208/220/ 240 Vac $\pm 5\%$, 50/60 Hz, single-phase, 50 W max.	100/110/120/200/208/220/ 240 Vac $\pm 5\%$, 50/60 Hz, single-phase, 110 W max.
(select via internal taps)		
RF Connectors	Type N female	Type N female
Cooling	Forced air (self-contained fans)	Forced air (self-contained fans)
Weight	4.1 kg (9.0 lb)	9.1 kg (20.0 lb)

Typical Power Curves

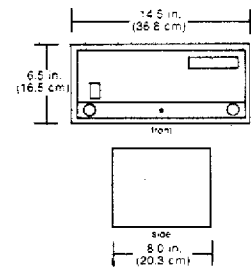
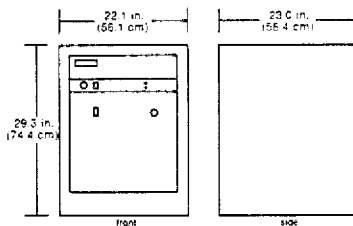
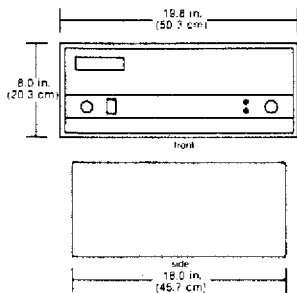
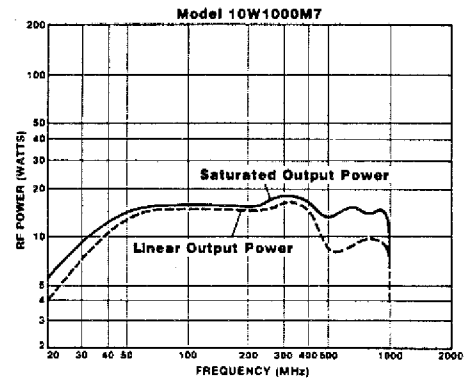
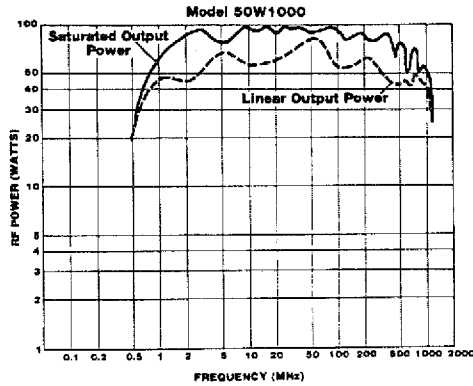
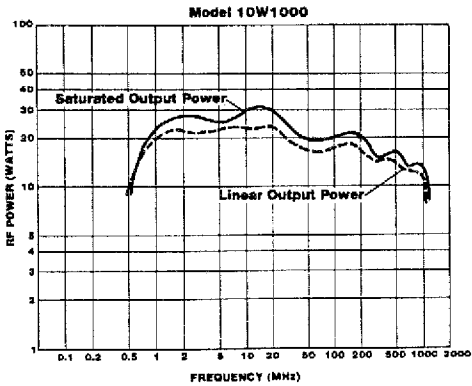


Dimensions

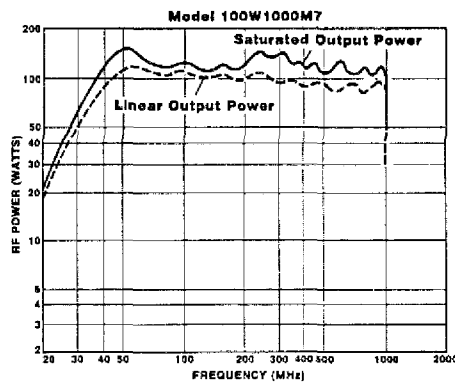
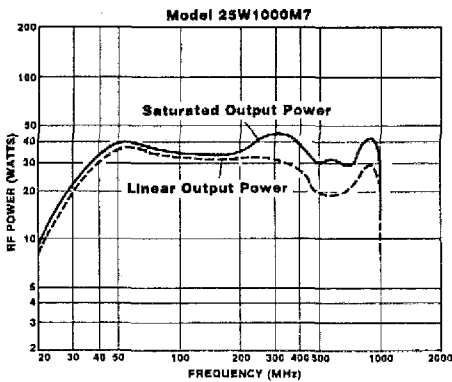
Models 1W1000 and 5W1000 are available as OEM rf circuit modules without power supply. Contact Amplifier Research for further information.



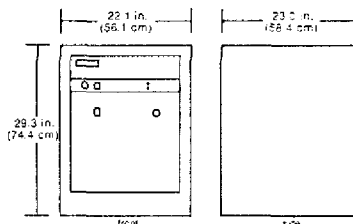
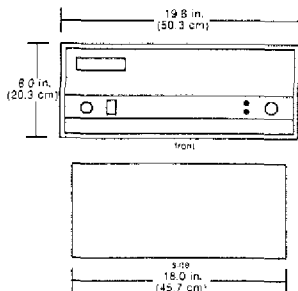
10W1000	50W1000	10W1000M7
22 watts 10 watts 10 watts minimum	100 watts 50 watts 40 watts minimum	15 watts 10 watts 8 watts minimum
± 1.5 dB maximum; ± 1.0 dB typical	± 2.0 dB maximum; ± 1.5 dB typical	± 1.5 dB maximum; ± 1.0 dB typical
1 to 1000 MHz	1 to 1000 MHz	100 to 1000 MHz
1.0 milliwatt max.	1.0 milliwatt max.	1.0 milliwatt max.
40 dB minimum	47 dB minimum	40 dB minimum
50 ohms; VSWR 2:1 max.	50 ohms; VSWR 2:1 max.	50 ohms; VSWR 2.1:1 max.
50 ohms nominal	50 ohms nominal	50 ohms nominal
100%	100%	100%
100%	100%	100%
noise floor data on request Minus 20 dBc max. at 10 watts 50 dBm typical	noise floor data on request Minus 20 dBc max. at 40 watts 58 dBm typical	noise floor data on request Minus 20 dBc max. at 8 watts 49 dBm typical
100/110/120/200/208/220/ 240 Vac ± 5%, 50/60 Hz, single-phase, 400 W max.	100/110/120/200/208/220/ 240 Vac ± 5%, 50/60 Hz, single-phase, 1900 W max.	100/110/120/200/208/220/ 240 Vac ± 5%, 50/60 Hz, single-phase, 150 W max.
Type N female	Type N female	Type N female
Forced air (self-contained fans)	Forced air (self-contained fans)	Forced air (self-contained fans)
28.4 kg (63.0 lb)	98.0 kg (215.0 lb)	9.1 kg (20 lb)



25W1000M7	100W1000M7	
40 watts 25 watts	180 watts 100 watts	Power output, cw up to minimum
20 watts minimum	70 watts minimum	Power output, cw, linear (less than 1 dB compression into 50 ohms)
± 1.5 dB maximum; ± 1.0 dB typical	± 2.0 dB maximum; ± 1.5 dB typical	Flatness
100 to 1000 MHz	100 to 1000 MHz	Frequency response (instantaneous)
1.0 milliwatt max.	1.0 milliwatt max.	Input for rated output
45 dB minimum	50 dB minimum	Power gain
50 ohms; VSWR 2.1:1 max.	50 ohms; VSWR 2.1:1 max.	Input impedance
50 ohms nominal	50 ohms nominal	Output impedance
100%	100%	Mismatch tolerance (ability to operate without damage, foldback, or oscillation with any magnitude and phase of source and load impedance)
100%	100%	Modulation capability (ability to reproduce faithfully AM, FM, or pulse modulation appearing on input signal)
noise floor data on request	noise floor data on request	Noise Figure
Minus 20 dBc max. at 20 watts	Minus 20 dBc max. at 70 watts	Harmonic distortion
52 dBm typical	60 dBm typical	Third-order intercept point
100/110/120/200/208/220/ 240 Vac ± 5%, 50/60 Hz, single-phase, 750 W max.	100/110/120/200/208/220/ 240 Vac ± 5%, 50/60 Hz, single-phase, 3000 W max.	Primary power (select via internal taps)
Type N female	Type N female	RF Connectors
Forced air (self-contained fans)	Forced air (self-contained fans)	Cooling
28.4 kg (63.0 lb)	98.0 kg (215.0 lb)	Weight



Typical Power Curves



Dimensions

1 watt to 100 watts. 100 kHz to 1 GHz.

The Amplifier Research "W" Series constitutes a complete family of self-contained ultra-broadband solid-state amplifiers providing linear operation over the spectrum from 100 kHz to 1000 MHz. The amplifiers are conservatively rated at 1, 5, 10, 25, 50, and 100 watts, and feature instantaneous bandwidth, flat output, and immunity to even worstcase load mismatch including shorted or open cable without damage or system shutdown.

Applications

- Sweep, cw, and pulse rf and emi susceptibility testing without bandswitching or tuning
- Antenna and component testing, and equipment calibration
- General laboratory instrumentation

