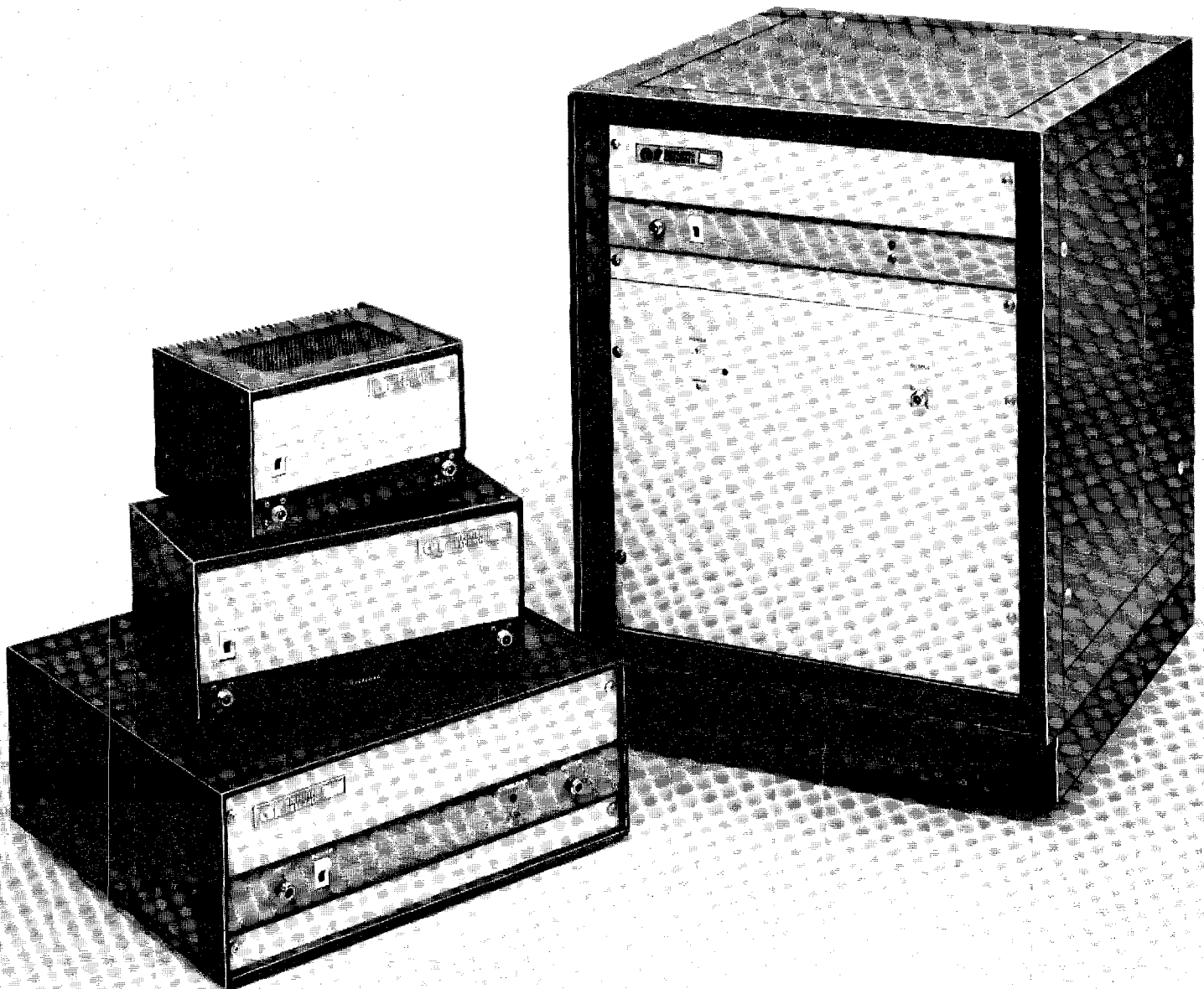




**AMPLIFIER  
RESEARCH**

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

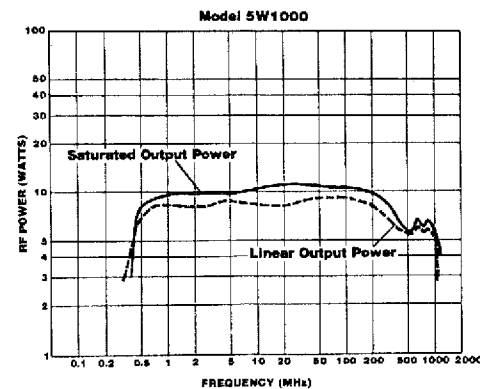
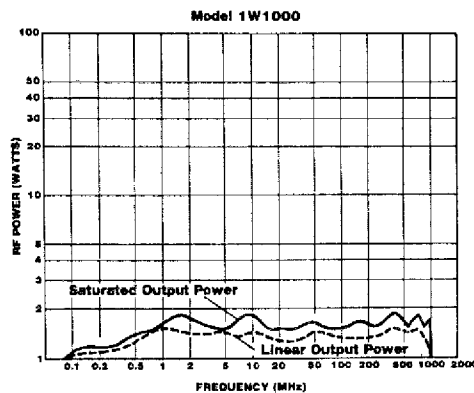
**"W" Series  
ULTRA-BROADBAND  
RF POWER AMPLIFIERS**



# Specifications

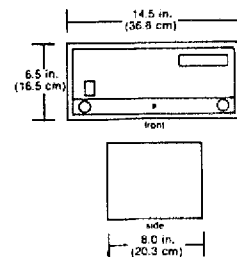
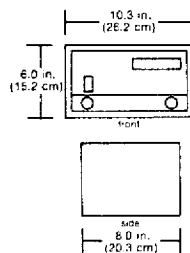
	1W1000	5W1000
Power output, cw up to .....	2 watts	9 watts
minimum .....	1 watt	5 watts
Power output, cw linear (less than 1 dB compression into 50 ohms)	1 watt minimum	5 watts minimum
Flatness .....	$\pm 1.0$ dB maximum; $\pm 0.5$ dB typical	$\pm 1.5$ dB maximum; $\pm 1.0$ dB typical
Frequency response .....	100 kHz to 1000 MHz	500 kHz to 1000 MHz
(instantaneous)		
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

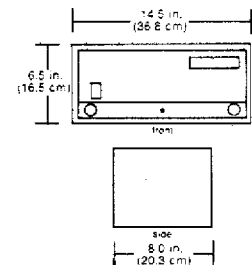
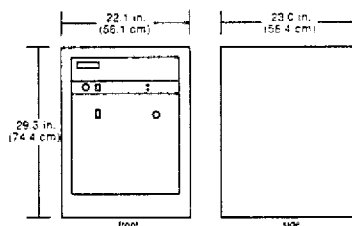
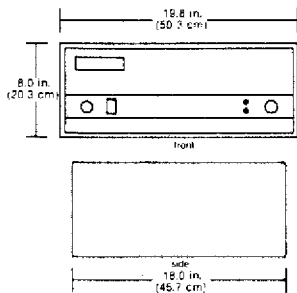
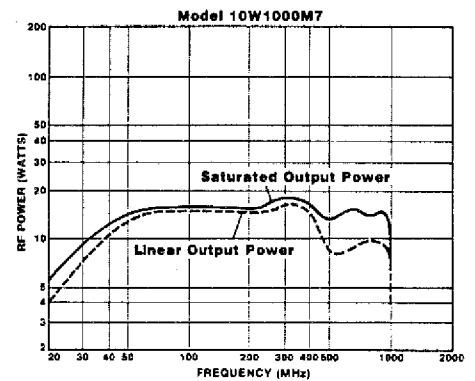
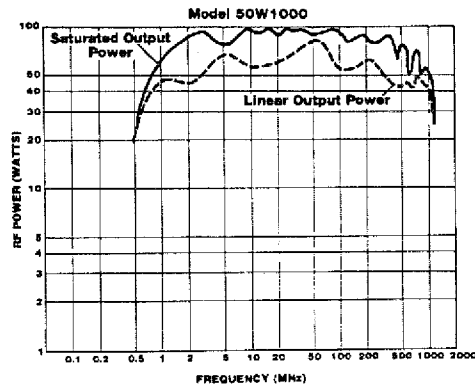
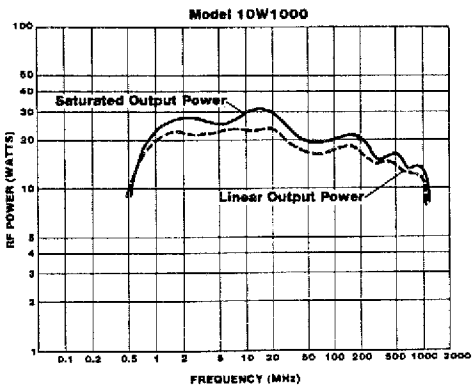


## Dimensions

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)

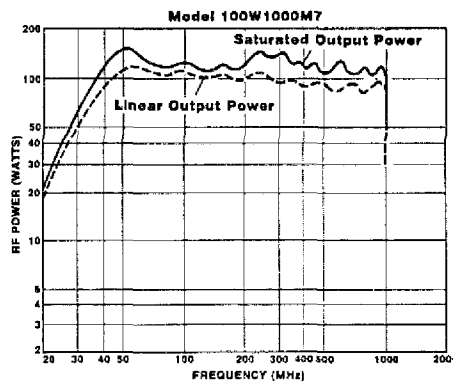
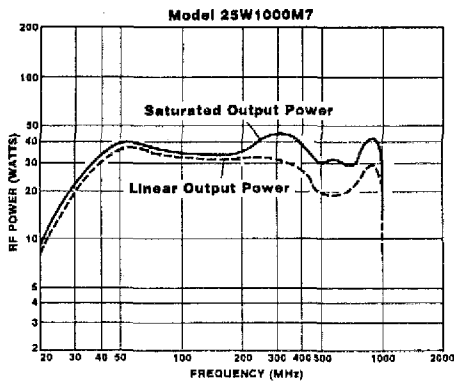
Forced air (self-contained fans)

**Cooling**

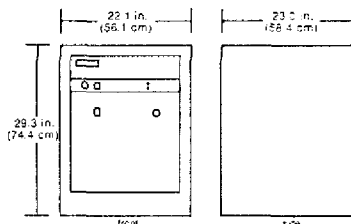
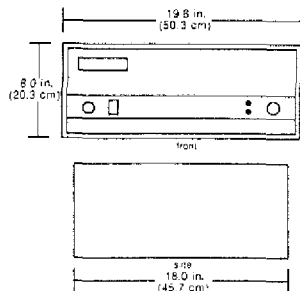
28.4 kg (63.0 lb)

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

