

8300TP8G12

- Pulse Amplifier
- M1–M12
- 8300 Watts
- 8GHz–12GHz

Features

The Model 8300TP8G12 is a self contained, forced air cooled, broadband traveling wave tube (TWT) microwave amplifier system designed for pulse applications at low to moderate duty factors where instantaneous bandwidth and high gain are required. Reliable TWT subsystems provide a conservative 8300 watts minimum peak RF pulse power at the amplifier output connector. Stated power specifications are at the fundamental frequency.

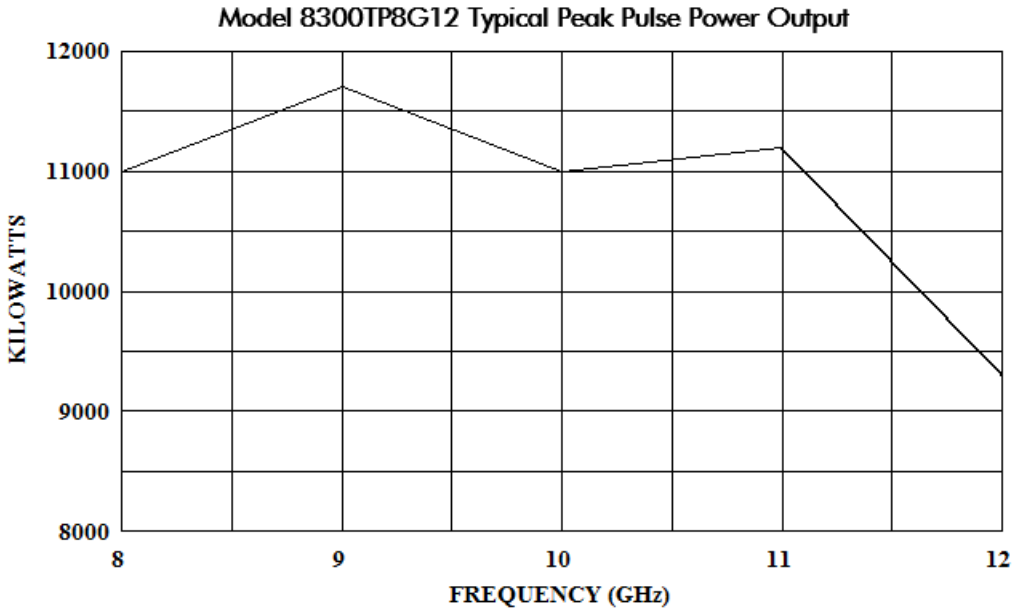
The amplifier's front panel digital display shows forward and reflected average power output or forward and reflected peak power, plus extensive system status information accessed through a series of menus via soft keys. Status indicators include power on, warm-up, standby, operate, faults, excess average or peak reflected power warning and remote. Standard features include a built-in IEEE-488 (GPIB) interface, 0dBm input, TTL Gating, VSWR protection, gain control, RF output sample ports, auto sleep, plus monitoring of TWT helix current, cathode voltage, collector voltage, heater current, heater voltage, baseplate temperature and cabinet temperature. Modular design of the power supply and RF components allow for easy access and repair. Use of switching mode power supplies results in significant weight reduction.

The rated power is developed by efficiently power combining the outputs from two 5000 watts (nominal) pulse TWTs that are factory matched in gain and phase, resulting in an excellent combination of wide instantaneous bandwidth with improved harmonic levels.

Housed in a stylish contemporary cabinet, the amplifier provides readily available pulsed RF power for a variety of applications in Test and Measurement, (including EMC RF pulse susceptibility testing), Industrial and University Research and Development, and Service applications. AR also offers a broad range of amplifiers for CW (Continuous Wave) applications.

See Model Configurations for alternative packaging and prime power selection.

The export classification for this equipment is 3A999.d. These commodities, technology or software are controlled for export in accordance with the U.S. Export Administration Regulations. Diversion contrary to U.S. law is prohibited.



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Specifications

POWER (Fundamental), Peak Pulse, @ Output: Nominal, 10,000 watts; Minimum, 8300 watts

FLATNESS: ±10 dB maximum, ±5 dB at rated power

FREQUENCY RESPONSE: 8-12 GHz

INPUT FOR RATED OUTPUT: 1.0 milliwatt maximum

GAIN (at maximum setting): 69 dB minimum

GAIN ADJUSTMENT (continuous range): 35 dB minimum

INPUT IMPEDANCE: 50 ohms, VSWR 2.5:1 maximum

OUTPUT IMPEDANCE: 50 ohms, VSWR 2.5:1 typical

MISMATCH TOLERANCE: Output pulse width foldback protection at peak reflected power exceeding 4000 watts. Will operate without damage or oscillation with any magnitude and phase of source and load impedance. May oscillate with unshielded open due to coupling to input. Should not be tested with connector off. See S2M special option, if applicable.

NOISE POWER DENSITY:

(pulse on)	Minus 70 dBm/Hz maximum; Minus 73 dBm/Hz typical
(pulse off)	Minus 140 dBm/Hz (typical)

HARMONIC DISTORTION: Minus 15 dBc maximum

PRIMARY POWER: See Model Configurations

PULSE CAPABILITY:

Pulse Width	0.2 – 50 microseconds.
Pulse Rate (PRF)	100 kHz maximum
Duty Cycle	4% maximum.
RF Rise and Fall	70 ns max (10% to 90%).
Delay	500 ns maximum from pulse input to RF 90%
Pulse Width Distortion	±50 ns maximum (50% points of output pulse width compared to 50% points of input pulse width)
Pulse Off Isolation	80 dB minimum, 90 dB typical
Pulse Input	TTL level, 50 ohm nominal termination

CONNECTORS (See S1C option, if available):

RF input:	Type N precision female, rear panel.
RF output:	Type WR90 waveguide flange, rear panel
RF output forward and reflected sample ports:	Type N precision female, rear panel
Pulse input:	Type BNC female, rear panel
GPIB:	IEEE-488 female, rear panel
Interlock:	DB-15 female, rear panel

COOLING: Forced air (self contained fans), air entry and exit in rear.

SIZE (W x H x D): 50.3 x 43 x 84 cm, 19.8 x 17 x 33 in

WEIGHT: 121 kg, 265 lbs

EXPORT CLASSIFICATION: 3A999.d

Model Configurations

E **Package Alternatives.** May select an alternative from the following [E1C or (E1C and E2S) and/or E3H]:

E1C **Cabinet:** Without outer enclosure for rack mounting, size (W x H x D) 49 x 40 (9U) x 81 cm, 19 x 15.75 (9U) x 32 in., Subtract approximately 16 kg, 35 lbs, for removal of outer enclosure.

E2S **Slides:** slides installed, add approximately 5 kg, 10 lbs.

E3H **Handles:** Front pull handles installed.

P **Prime Power:** Must select one primary power from the following [P1 or P2]

P1 **208V, US:** 208 VAC ± 10%, 3 phase, delta (4 wire) 50/60 Hz, 5 KVA maximum

P2 **400V, Europe:** 360-435 VAC, 3 phase, WYE (5 wire) 50/60 Hz, 5 KVA maximum. CE marked to comply with EMC European Directive 89/336/EEC for operation inside a shielded room.

P3 190-260VAC single phase, 50/60Hz, 5kVa max

S **Special Feature:** May select a special feature (extra cost) [S1C]:

S1C RF output on rear panel with all other connectors on front panel. Interlock connector BNC. RF output sample port 60dB coupling factor. This option also removes reflected sample port.

Model No.	Features E	P	S
8300TP8G12	Base model	P1	–
M1	E1C	P1	–
M2	E3H	P1	–
M3	E1C & E3H	P1	–
M4	E1C & E2S	P1	–
M5	E1C & E2S & E3H	P1	–
M6	–	P3	–
M7	E1C	P3	–
M8	E3H	P3	–
M9	E1C & E3H	P3	–
M10	E1C & E2S	P3	–
M11	E1C & E2S & E3H	P3	–
M12	E1C & E3H	P3	S1C

Model number example: Model 8300TP8G12M2 would have option E3H front pull handles installed.