

## T and TP Series “CW” & “Pulsed” Microwave TWTAs

### Highest Available Power (Up To 10,000 Watts)

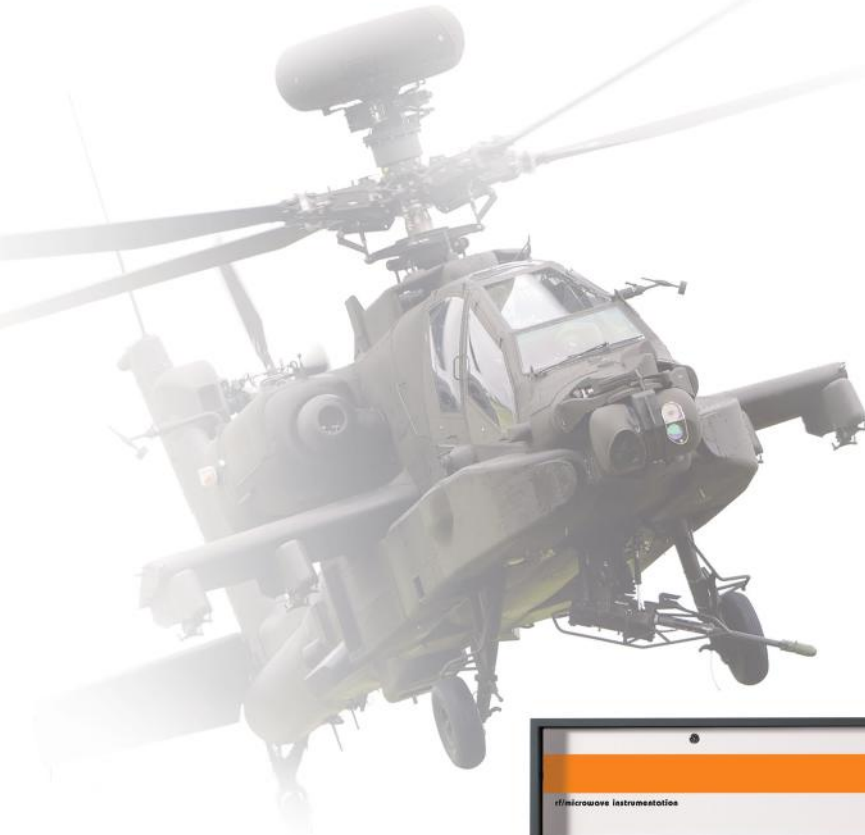
- Complies with the most stringent standards.
- Operation up to 50 GHz
- Faithfully Reproduce AM, FM Or Pulse Modulation Appearing On The Input Signal

### Intelligent Display

- Monitor forward and reverse power, and more.

### VSWR Protection

- Each amplifier is designed with output foldback protection.



# Microwave TWT Amplifiers 2.5 to 7.5 GHz

## 300T2G8 TWT Amplifier



### 300 watts CW, 2.5-7.5 GHz

**Power (fundamental), CW/Pulse @ Output Connector**  
 Nominal 350 watts / min. 300 watts  
 Linear @ 1dB Compression 75 watts min.

**Flatness** ±12dB max, equalized for ±5dB max. at rated power

**Frequency Response** 2.5 - 7.5 GHz instantaneously

**Input For Rated Output** 1 milliwatt max.

**Gain (at max. setting)** 55dB min.

**Gain Adjustment (continuous range)** 35dB min.

**Input Impedance** 50 ohms, VSWR 2.0:1 max.

**Output Impedance** 50 ohms, VSWR 2.5:1 typ.

**Mismatch Tolerance**  
 Output power foldback protection at reflected power exceeding 60 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.

**Video Pulse Capability**  
 Pulse Width 0.05 microseconds min.  
 Pulse Rate (PRF) 100 kHz max.  
 RF Rise and Fall 30 ns max. (10% to 90%)  
 Delay 300 ns max. from pulse input to RF 90%  
 Pulse width distortion ±30 ns max. (50% points of output pulse width compared to 50% points of input pulse width)

**Noise Power Density (pulse on)** Minus 75dBm/Hz max., Minus 80dBm/Hz typ.  
 (pulse off) Minus 140dBm/Hz typ.

**Harmonic Distortion** Minus 3dBc max., Minus 4.5dBc typ.

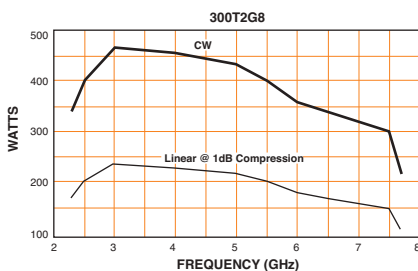
**Primary Power**  
 190 - 260 VAC  
 50/60 Hz, single phase  
 3 kVA max.

**Connectors**  
 RF input Type N female on rear panel  
 RF output Type N female on rear panel  
 RF output sample port Type N female on rear panel  
 Interlock DB-15 female on rear panel  
 Video BNC-female on rear panel  
 GPIB IEEE-488 female on rear panel

**Cooling**  
 Forced air (self contained fans), air entry and exit in rear.

**Weight** 54 kg (120 lb)

**Size (WxHxD)**  
 50.3 x 29.7 x 68.6 cm / 19.8 x 11.7 x 27 in.



## 500T2G8 TWT Amplifier



### 500 watts CW, 2.5-7.5 GHz

**Power (fundamental), CW/Pulse @ Output Connector**  
 Nominal 541 watts / min. 500 watts  
 Linear @ 1dB Compression 125 watts min.

**Flatness** ±8dB max, equalized for ±5dB max. at rated power

**Frequency Response** 2.5 - 7.5 GHz instantaneously

**Input For Rated Output** 1 milliwatt max.

**Gain (at max. setting)** 57dB min.

**Gain Adjustment (continuous range)** 35dB min.

**Input Impedance** 50 ohms, VSWR 2.0:1 max.

**Output Impedance** 50 ohms, VSWR 2.5:1 typ.

**Mismatch Tolerance**  
 Output power foldback protection at reflected power exceeding 100 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.

**Video Pulse Capability**  
 Pulse Width 0.05 microseconds min.  
 Pulse Rate (PRF) 100 kHz max.  
 RF Rise and Fall 30 ns max. (10% to 90%)  
 Delay 300 ns max. from pulse input to RF 90%  
 Pulse width distortion ±30 ns max. (50% points of output pulse width compared to 50% points of input pulse width)

**Noise Power Density (pulse on)** Minus 85dBm/Hz max., Minus 95dBm/Hz typ.  
 (pulse off) Minus 140dBm/Hz typ.

**Harmonic Distortion** Minus 3dBc max., Minus 3.5dBc typ.

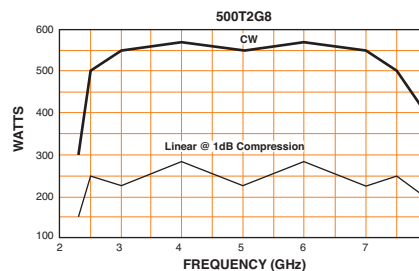
**Primary Power**  
 208 VAC ± 10%  
 50/60 Hz, three phase  
 3.5 kVA max.

**Connectors**  
 RF input Type N female on rear panel  
 RF output 7-16 DIN female on rear panel  
 RF output sample port Type N female on rear panel  
 Interlock DB-15 female on rear panel  
 Video BNC-female on rear panel  
 GPIB IEEE-488 female on rear panel

**Cooling**  
 Forced air (self contained fans), air entry and exit in rear.

**Weight** 55 kg (120 lb)

**Size (WxHxD)**  
 50.8 x 25.4 x 68.6 cm / 20 x 10 x 27 in.



## 1000T2G8B TWT Amplifier



### 1,000 watts CW, 2.5-7.5 GHz

**Power (fundamental), CW, @ Output Connector**  
 Nominal 1100 watts / min. 900 watts, 2.5 - 2.7 GHz,  
 1000 watts, 2.7 - 7.5 GHz  
 Linear @ 1dB Compression 250 watts min.

**Flatness** ±8dB max., equalized for ±3dB max. at rated power

**Frequency Response** 2.5 - 7.5 GHz instantaneously

**Input For Rated Output** 1 milliwatt max.

**Gain (at max. setting)** 60dB min.

**Gain Adjustment (continuous range)** 35dB min.

**Input Impedance** 50 ohms, VSWR 2.0:1 max.

**Output Impedance** 50 ohms, VSWR 2.5:1 typ.

**Mismatch Tolerance**  
 Output power foldback protection at reflected power exceeding 200 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.

**Noise Power Density**  
 Minus 80dBm/Hz max., Minus 90dBm/Hz typ.

**Harmonic Distortion**  
 Minus 15dBc max., Minus 17dBc typ.

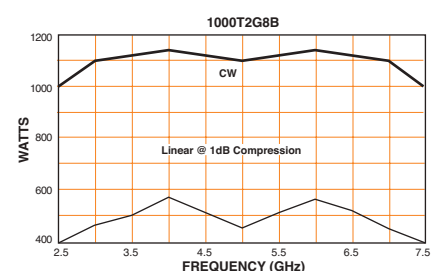
**Primary Power**  
 190 - 255 VAC  
 50/60 Hz, three phase, delta (4 wire)  
 8.0 kVA max.

**Connectors**  
 RF input Type N female on rear panel  
 RF output Type WRD-250D30 waveguide flange on rear panel  
 RF output sample port Type N female on rear panel  
 Interlock DB-15 female on rear panel  
 GPIB IEEE-488 female on rear panel

**Cooling**  
 Forced air (self contained fans), air entry and exit in rear.

**Weight** 295 kg (650 lb)

**Size (WxHxD)**  
 56 x 160 x 82.3 cm / 22.1 x 63 x 32.4 in.



### 1500T2G8A TWT Amplifier



### 200T4G8 TWT Amplifier



### 250T6G18 TWT Amplifier



#### 1,700 watts CW, 2.5-7.5 GHz

**Power (fundamental), CW, @ Output Connector**  
 Nominal 2000 watts / min. 1600 watts, 2.5 - 3 GHz  
 1700 watts, 3 - 7.5 GHz  
 Linear @ 1dB Compression 400 watts min.

**Flatness**  
 ±8dB max., equalized for ±6dB max. at rated power

**Frequency Response** 2.5 - 7.5 GHz instantaneously

**Input For Rated Output** 1 milliwatt max.  
**Gain (at max. setting)** 62dB min.  
**Gain Adjustment (continuous range)** 35dB min.  
**Input Impedance** 50 ohms, VSWR 2.0:1 max.  
**Output Impedance** 50 ohms, VSWR 2.5:1 typ.

**Mismatch Tolerance**  
 Output power foldback protection at reflected power exceeding 300 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.

**Noise Power Density**  
 Minus 85dBm/Hz max., Minus 95dBm/Hz typ.

**Harmonic Distortion**  
 Minus 15dBc max., Minus 17dBc typ.

**Primary Power**  
 190 - 255 VAC  
 50/60 Hz, three phase, delta (4 wire)  
 11 kVA max.

**Connectors**  
 RF input Type N female on rear panel  
 RF output Type WRD-250D30 waveguide flange on rear panel  
 RF output sample ports (forward and reflected) Type N female on rear panel  
 Interlock DB-15 female on rear panel  
 GPIB IEEE-488 female on rear panel

**Cooling**  
 Forced air (self contained fans), air entry and exit in rear.

**Weight** 296 kg (650 lb)  
**Size (WxHxD)**  
 56 x 160 x 82.3 cm / 22.1 x 63 x 32.4 in.

#### 200 watts CW, 4.0-8.0 GHz

**Power (fundamental), CW, @ Output Connector**  
 Nominal 262 watts / min. 200 watts  
 Linear @ 1dB Compression 100 watts min.

**Flatness** ±6dB max. at rated power

**Frequency Response** 4.0 - 8.0 GHz instantaneously

**Input For Rated Output** 1 milliwatt max.  
**Gain (at max. setting)** 53dB min.  
**Gain Adjustment (continuous range)** 35dB min.  
**Input Impedance** 50 ohms, VSWR 2.0:1 max.  
**Output Impedance** 50 ohms, VSWR 2.5:1 typ.

**Mismatch Tolerance**  
 Output power foldback protection at reflected power exceeding 40 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.

**Noise Power Density**  
 Minus 64dBm/Hz max., Minus 70dBm/Hz typ.

**Harmonic Distortion**  
 Minus 4dBc max., Minus 7dBc typ.

**Primary Power**  
 190-260 VAC  
 50/60 Hz, single phase  
 2.0 kVA max.

**Connectors**  
 RF input Type N female on rear panel  
 RF output Type N female on rear panel  
 RF output sample port Type N female on rear panel  
 Interlock DB-15 female on rear panel  
 GPIB IEEE-488 female on rear panel

**Cooling**  
 Forced air (self contained fans), air entry and exit in rear.

**Weight** 54 kg (120 lb)  
**Size (WxHxD)**  
 50.3 x 29.7 x 68.6 cm / 19.8 x 11.7 x 27 in.

#### 250 watts CW, 6-18 GHz

**Power (fundamental), CW/Pulse @ Output Connector**  
 Nominal 300 watts / min. 250 watts  
**Flatness** ±6dB max. at rated power  
**Frequency Response** 6 - 18 GHz instantaneously

**Input For Rated Output** 1 milliwatt max.  
**Gain (at max. setting)** 54dB min.  
**Gain Adjustment (continuous range)** 35dB min.  
**Input Impedance** 50 ohms, VSWR 2.5:1 max.  
**Output Impedance** 50 ohms, VSWR 2.5:1 typ.

**Mismatch Tolerance**  
 Output power foldback protection at reflected power exceeding 50 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.

**Video Pulse Capability**  
 Pulse Width 1 microseconds min.  
 Pulse Rate (PRF) 100 kHz max.  
 RF Rise and Fall 30 ns max. (10% to 90%)  
 Delay 300 ns max. from pulse input to RF 90%  
 Pulse width distortion ±30 ns max. (50% points of output pulse width compared to 50% points of input pulse width)

**Noise Power Density**  
 (pulse on) Minus 65dBm/Hz max., Minus 70dBm/Hz typ.  
 (pulse off) Minus 140dBm/Hz typ.

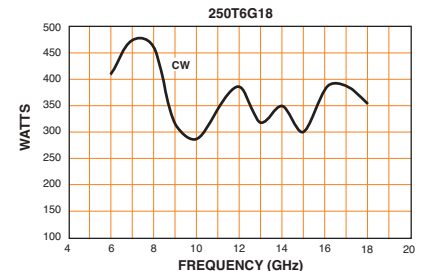
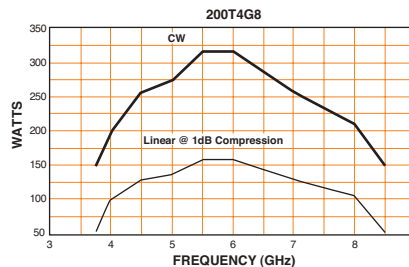
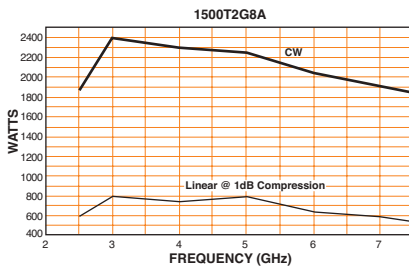
**Harmonic Distortion**  
 Minus 5dBc max., Minus 8dBc typ.

**Primary Power**  
 190 - 260 VAC, 50/60 Hz, single phase, 2.0 kVA max.

**Connectors**  
 RF input Type N female on rear panel  
 RF output Type WRD-650 waveguide flange on rear panel  
 RF output sample port Type N female on rear panel  
 Interlock DB-15 female on rear panel  
 Video BNC-female on rear panel  
 GPIB IEEE-488 female on rear panel

**Cooling**  
 Forced air (self contained fans), air entry and exit in rear.

**Weight** 53 kg (115 lb)  
**Size (WxHxD)**  
 50.3 x 29.7 x 68.6 cm / 19.8 x 11.7 x 27 in.



# 7.5 to 18 GHz

## 250T8G18 TWT Amplifier



### 250 watts CW, 7.5-18 GHz

**Power (fundamental), CW/Pulse @ Output Connector**  
 Nominal 300 watts / min. 250 watts  
 Linear @ 1dB Compression 70 watts min.

**Flatness** ±12dB max., equalized for ±3dB max. at rated power

**Frequency Response** 7.5 - 18 GHz instantaneously

**Input For Rated Output** 1 milliwatt max.

**Gain (at max. setting)** 54dB min.

**Gain Adjustment (continuous range)** 35dB min.

**Input Impedance** 50 ohms, VSWR 2.0:1 max.

**Output Impedance** 50 ohms, VSWR 2.5:1 typ.

**Mismatch Tolerance**  
 Output power foldback protection at reflected power exceeding 50 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.

**Video Pulse Capability**  
 Pulse Width 0.05 microseconds min.  
 Pulse Rate (PRF) 100 kHz max.  
 RF Rise and Fall 30 ns max. (10% to 90%)  
 Delay 300 ns max. from pulse input to RF 90%  
 Pulse width distortion ±30 ns max. (50% points of output pulse width compared to 50% points of input pulse width)

**Noise Power Density**  
 (pulse on) Minus 70dBm/Hz max., Minus 72dBm/Hz typ.  
 (pulse off) Minus 140dBm/Hz typ.

**Harmonic Distortion**  
 Below 10 GHz, Minus 5dBc max., Minus 7dBc typ.  
 10 - 12 GHz, Minus 8dBc max., Minus 12dBc typ.  
 Above 12 GHz, Minus 20dBc max., Minus 30dBc typ.

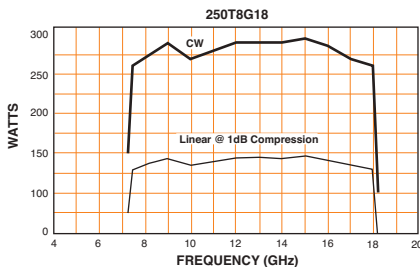
**Primary Power**  
 190 - 260 VAC, 50/60 Hz, single phase, 2.5 kVA max.

**Connectors**  
 RF input Type N female on rear panel  
 RF output Type WRD-750D24 waveguide flange on rear panel  
 RF output sample port Type N female on rear panel  
 Interlock DB-15 female on rear panel  
 Video BNC-female on rear panel  
 GPIB IEEE-488 female on rear panel

**Cooling**  
 Forced air (self contained fans), air entry and exit in rear.

**Weight** 53 kg (115 lb)

**Size (WxHxD)**  
 50.3 x 29.7 x 68.6 cm / 19.8 x 11.7 x 27 in.



## 500T8G18 TWT Amplifier



### 500 watts CW, 7.5-18 GHz

**Power (fundamental), CW, @ Output Connector**  
 Nominal 543 watts / min. 500 watts  
 Linear @ 1dB Compression 125 watts min.

**Flatness** ±11dB max., equalized for ±3dB max. at rated power

**Frequency Response** 7.5 - 18 GHz instantaneously

**Input For Rated Output** 1 milliwatt max.

**Gain (at max. setting)** 57dB min.

**Gain Adjustment (continuous range)** 35dB min.

**Input Impedance** 50 ohms, VSWR 2.0:1 max.

**Output Impedance** 50 ohms, VSWR 2.5:1 typ.

**Mismatch Tolerance**  
 Output power foldback protection at reflected power exceeding 100 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.

**Noise Power Density**  
 Minus 70dBm/Hz max., Minus 72dBm/Hz typ.

**Harmonic Distortion**  
 Minus 20dBc/Hz max., Minus 22dBc/Hz typ.

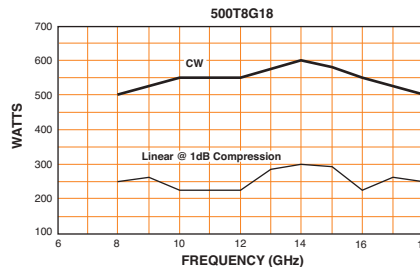
**Primary Power**  
 208 VAC ± 10%, 50/60 Hz, three phase, 4 kVA max.

**Connectors**  
 RF input Type N female on rear panel  
 RF output Type WRD-750D24 waveguide flange on rear panel  
 RF output sample port Type N female on rear panel  
 GPIB IEEE-488 female on rear panel  
 Interlock DB-15 female on rear panel

**Cooling**  
 Forced air (self contained fans), air entry and exit in rear.

**Weight** 91 kg (200 lb)

**Size (WxHxD)**  
 50.3 x 40.6 x 68.6 cm / 19.8 x 16.0 x 27 in.



## 1000T8G18B TWT Amplifier



### 1,000 watts CW, 7.5-18 GHz

**Power (fundamental), CW, @ Output Connector**  
 Nominal 1100 watts  
 Minimum 1000 watts 7.5 - 17 GHz, 925 watts 17 - 18 GHz  
 Linear @ 1dB Compression 250 watts min.

**Flatness** ±11dB max., equalized for ±3dB max. at rated power

**Frequency Response** 7.5 - 18 GHz instantaneously

**Input For Rated Output** 1 milliwatt max.

**Gain (at max. setting)** 60dB min.

**Gain Adjustment (continuous range)** 35dB min.

**Input Impedance** 50 ohms, VSWR 2.0:1 max.

**Output Impedance** 50 ohms, VSWR 2.5:1 typ.

**Mismatch Tolerance**  
 Output power foldback protection at reflected power exceeding 200 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.

**Noise Power Density**  
 Minus 70dBm/Hz max., Minus 72dBm/Hz typ.

**Harmonic Distortion**  
 Minus 20dBc max., Minus 27dBc typ.

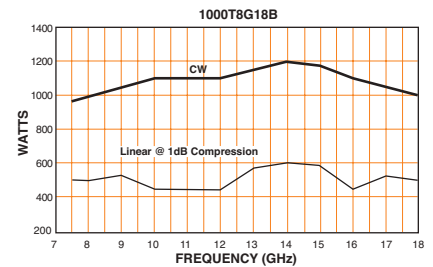
**Primary Power**  
 190 - 255 VAC  
 50/60 Hz, three phase, delta (4 wire)  
 8 kVA max.

**Connectors**  
 RF input Type N female on rear panel  
 RF output Type WRD-750D24 waveguide flange on rear panel  
 RF output sample port Type N female on rear panel  
 Interlock DB-15 female on rear panel  
 GPIB IEEE-488 female on rear panel

**Cooling**  
 Forced air (self contained fans), air entry and exit in rear.

**Weight** 295 kg (650 lb)

**Size (WxHxD)**  
 56 x 160 x 82.3 cm / 22.1 x 63 x 32.4 in.



1500T8G18 TWT Amplifier



1,500 watts CW, 7.5-18 GHz

**Power (fundamental), CW, @ Output Connector**  
 Nominal 2000 watts / Min. 1500 watts  
 Linear @ 1dB Compression 375 watts min.

**Flatness**  
 ±11dB max., equalized for ±6dB max. at rated power

**Frequency Response** 7.5 - 18 GHz instantaneously

**Input For Rated Output** 1 milliwatt max.

**Gain (at max. setting)** 62dB min.

**Gain Adjustment (continuous range)** 35dB min.

**Input Impedance** 50 ohms, VSWR 2.0:1 max.

**Output Impedance** 50 ohms, VSWR 2.5:1 typ.

**Mismatch Tolerance**  
 Output power foldback protection at reflected power exceeding 300 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.

**Noise Power Density**  
 Minus 70dBm/Hz max., Minus 72dBm/Hz typ.

**Harmonic Distortion**  
 Minus 20dBc max., Minus 27dBc typ.

**Primary Power**  
 190 - 255 VAC  
 50/60 Hz, three phase, delta (4 wire)  
 16 kVA max.

**Connectors**  
 RF input Type N female on rear panel  
 RF output Type WRD-750D24 waveguide flange on rear panel  
 RF output sample ports (forward and reverse)  
 Interlock Type N female on rear panel  
 GPIB DB-15 female on rear panel  
 IEEE-488 female on rear panel

**Cooling**  
 Forced air (self contained fans), air entry and exit in rear.

**Weight** 546 kg (1200 lb)

**Size (WxHxD) (2 cabinets)**  
 56 x 160 x 84 cm / 22.1 x 63 x 33 in. per cabinet

40T18G26A TWT Amplifier



40 watts CW, 18-26.5 GHz

**Power (fundamental), CW, @ Output Connector**  
 Nominal 45 watts / min. 40 watts  
 Linear @ 1dB Compression 10 watts min.

**Flatness** ±8dB max.

**Frequency Response** 18 - 26.5 GHz instantaneously

**Input For Rated Output** 1 milliwatt max.

**Gain (at max. setting)** 46dB min.

**Gain Adjustment (continuous range)** 35dB min.

**Input Impedance** 50 ohms, VSWR 2.0:1 max.

**Output Impedance** 50 ohms, VSWR 2.5:1 typ.

**Mismatch Tolerance**  
 Output power foldback protection at reflected power exceeding 10 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.

**Noise Power Density**  
 Minus 60dBm/Hz max., Minus 65dBm/Hz typ.

**Harmonic Distortion**  
 Minus 20dBc max., Minus 28dBc typ.

**Primary Power**  
 99 - 260 VAC  
 50/60 Hz, single phase  
 850 VA max.

**Connectors**  
 RF input Type K female on rear panel  
 RF output Type WR-42 waveguide flange on rear panel  
 RF output sample port Type K female on rear panel  
 Interlock DB-15 female on rear panel  
 GPIB IEEE-488 female on rear panel

**Cooling**  
 Forced air (self contained fans), air entry and exit in rear.

**Weight** 30 kg (65 lb)

**Size (WxHxD)**  
 50.3 x 16.5 x 68.6 cm / 19.8 x 6.5 x 27 in.

130T18G26z5B TWT Amplifier



130 watts CW, 18-26.5 GHz

**Power (fundamental), CW, @ Output Connector**  
 Nominal 150 watts / min. 130 watts  
 Linear @ 1dB Compression 30 watts min.

**Flatness** ±9dB max.

**Frequency Response** 18 - 26.5 GHz instantaneously

**Input For Rated Output** 1 milliwatt max.

**Gain (at max. setting)** 52dB min.

**Gain Adjustment (continuous range)** 35dB min.

**Input Impedance** 50 ohms, VSWR 2.0:1 max.

**Output Impedance** 50 ohms, VSWR 2.5:1 typ.

**Mismatch Tolerance**  
 Output power foldback protection at reflected power exceeding 20 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.

**Noise Power Density**  
 Minus 70dBm/Hz max., Minus 75dBm/Hz typ.

**Harmonic Distortion**  
 Minus 15dBc max., Minus 20dBc typ.

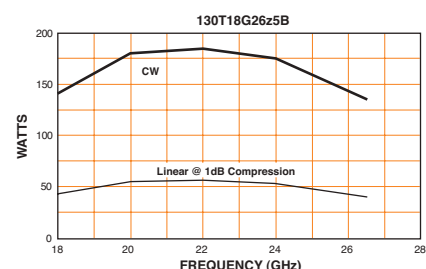
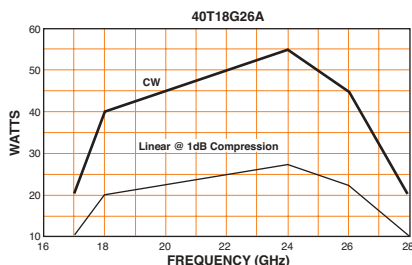
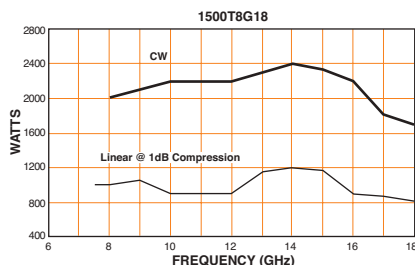
**Primary Power**  
 190 - 260 VAC  
 50/60 Hz, single phase  
 0.8 kVA max.

**Connectors**  
 RF input Type K female on rear panel  
 RF output Type WR-42 waveguide flange on rear panel  
 RF output sample port Type K female on rear panel  
 Interlock DB-15 female on rear panel  
 GPIB IEEE-488 on rear panel  
 Video BNC female on rear panel

**Cooling**  
 Forced air (self contained fans), air entry and exit in rear.

**Weight** 36 kg (80 lb)

**Size (WxHxD)**  
 50.3 x 16.5 x 68.6 cm / 19.8 x 6.5 x 27 in.

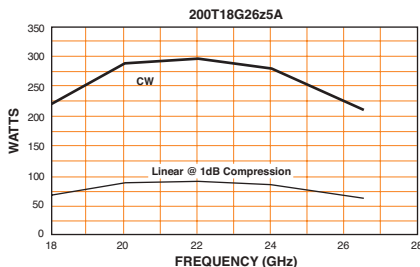


## 200T18G26z5A TWT Amplifier



### 200 watts CW, 18-26.5 GHz

<b>Power (fundamental), CW, @ Output Connector</b>	
Nominal	225 watts / min. 200 watts
Linear @ 1dB Compression	50 watts min.
Flatness	±10dB max.
Frequency Response	18 - 26.5 GHz instantaneously
Input For Rated Output	1 milliwatt max.
Gain (at max. setting)	53dB min.
Gain Adjustment (continuous range)	35dB min.
Input Impedance	50 ohms, VSWR 2.0:1 max.
Output Impedance	50 ohms, VSWR 2.5:1 typ.
<b>Mismatch Tolerance</b>	
Output power foldback protection at reflected power exceeding 40 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.	
<b>Video Pulse Capability</b>	
Pulse Width	0.1 microseconds min.
Pulse Rate (PRF)	10 kHz max.
Duty Cycle	Some restrictions apply. Contact AR with application requirements.
RF Rise and Fall	100 ns max. (10% to 90%)
Delay	500 ns max from pulse input to RF90%
Pulse Width Distortion	200 ns max (50% points of output pulse width compared to 50% points of input pulse width)
Noise Power Density (pulse off)	Minus 140 dBm/Hz typ.
Pulse Off Isolation	80 dB min., 90 dB typ.
Pulse Input	TTL Level, 50 Ohm nominal termination, high level enables RF when video pulsing mode is selected.
<b>Noise Power Density</b>	
Minus 70dBm/Hz max., Minus 75dBm/Hz typ.	
<b>Harmonic Distortion</b>	
Minus 20dBc max., Minus 30dBc typ.	
<b>Primary Power</b>	
190 - 260 VAC	
50/60 Hz, single phase	
3 kVA max.	
<b>Connectors</b>	
RF input	Type K female on rear panel
RF output	Type WR-42 waveguide flange on rear panel
RF output sample port	Type K female on rear panel
Interlock	DB-15 female on rear panel
GPIB	IEEE-488 on rear panel
<b>Cooling</b>	
Forced air (self contained fans), air entry and exit in rear.	
Weight	91 kg (200 lb)
<b>Size (WxHxD)</b>	
50.3 x 43 x 81 cm / 19.8 x 17 x 32 in.	

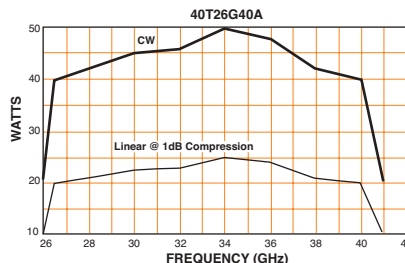


## 40T26G40A TWT Amplifier



### 40 watts CW, 26.5-40 GHz

<b>Power (fundamental), CW, @ Output Connector</b>	
Nominal	45 watts / min. 40 watts
Linear @ 1dB Compression	10 watts min.
Flatness	±8dB max.
Frequency Response	26.5 - 40 GHz instantaneously
Input For Rated Output	1 milliwatt max.
Gain (at max. setting)	46dB min.
Gain Adjustment (continuous range)	35dB min.
Input Impedance	50 ohms, VSWR 2.0:1 max.
Output Impedance	50 ohms, VSWR 2.5:1 typ.
<b>Mismatch Tolerance</b>	
Output power foldback protection at reflected power exceeding 10 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.	
<b>Noise Power Density</b>	
Minus 60dBm/Hz max., Minus 70dBm/Hz typ.	
<b>Harmonic Distortion</b>	
Minus 20dBc max., Minus 28dBc typ.	
<b>Primary Power</b>	
99 - 260 VAC	
50/60 Hz, single phase	
850 VA max.	
<b>Connectors</b>	
RF input	Type K female on rear panel
RF output	Type WR-28 waveguide flange on rear panel
RF output sample port	Type K female on rear panel
Interlock	DB-15 female on rear panel
GPIB	IEEE-488 on rear panel
<b>Cooling</b>	
Forced air (self contained fans), air entry and exit in rear.	
Weight	30 kg (65 lb)
<b>Size (WxHxD)</b>	
50.3 x 16.5 x 68.6 cm / 19.8 x 6.5 x 27 in.	

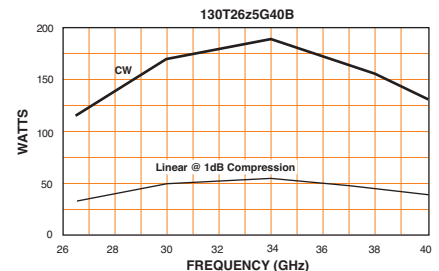


## 130T26z5G40B TWT Amplifier



### 130 watts CW, 26.5-40 GHz

<b>Power (fundamental), CW, @ Output Connector</b>	
Nominal	150 watts / min. 130 watts
Linear @ 1dB Compression	30 watts min.
Flatness	±10dB max.
Frequency Response	26.5 - 40 GHz instantaneously
Input For Rated Output	1 milliwatt max.
Gain (at max. setting)	52dB min.
Gain Adjustment (continuous range)	35dB min.
Input Impedance	50 ohms, VSWR 2.0:1 max.
Output Impedance	50 ohms, VSWR 2.5:1 typ.
<b>Mismatch Tolerance</b>	
Output power foldback protection at reflected power exceeding 20 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.	
<b>Noise Power Density</b>	
Minus 70dBm/Hz max., Minus 75dBm/Hz typ.	
<b>Harmonic Distortion</b>	
Minus 15dBc max., Minus 20dBc typ.	
<b>Primary Power</b>	
190 - 260 VAC	
50/60 Hz, single phase	
0.8 kVA max.	
<b>Connectors</b>	
RF input	Type K female on rear panel
RF output	Type WR-28 waveguide flange on rear panel
RF output sample port	Type K female on rear panel
Interlock	DB-15 female on rear panel
GPIB	IEEE-488 on rear panel
<b>Cooling</b>	
Forced air (self contained fans), air entry and exit in rear.	
Weight	36 kg (80 lb)
<b>Size (WxHxD)</b>	
50.3 x 16.5 x 68.6 cm / 19.8 x 6.5 x 27 in.	



### 200T26z5G40A TWT Amplifier



#### 200 watts CW, 26.5-40 GHz

<b>Power (fundamental), CW, @ Output Connector</b>	
Nominal	225 watts / min. 200 watts
Linear @ 1dB Compression	50 watts min.
<b>Flatness</b>	±10dB max.
<b>Frequency Response</b>	26.5 - 40 GHz instantaneously
<b>Input For Rated Output</b>	1 milliwatt max.
<b>Gain (at max. setting)</b>	53dB min.
<b>Gain Adjustment (continuous range)</b>	35dB min.
<b>Input Impedance</b>	50 ohms, VSWR 2.0:1 max.
<b>Output Impedance</b>	50 ohms, VSWR 2.5:1 typ.

**Mismatch Tolerance**  
Output power foldback protection at reflected power exceeding 40 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.

**Video Pulse Capability**

Pulse Width	0.1 microseconds min.
Pulse Rate (PRF)	10 kHz max.
Duty Cycle	

Some restrictions apply. Contact AR with application requirements.

RF Rise and Fall	100 ns max. (10% to 90%)
Delay	500 ns max from pulse input to RF90%
Pulse Width Distortion	200 ns max (50% points of output pulse width compared to 50% points of input pulse width)
Noise Power Density (pulse off)	Minus 140 dBm/Hz typ.
Pulse Off Isolation	80 dB min., 90 dB typ.
Pulse Input	TTL Level, 50 Ohm nominal termination, high level enables RF when video pulsing mode is selected.

**Noise Power Density**  
Minus 70dBm/Hz max., Minus 75dBm/Hz typ.

**Harmonic Distortion**  
Minus 20dBc max., Minus 30dBc typ.

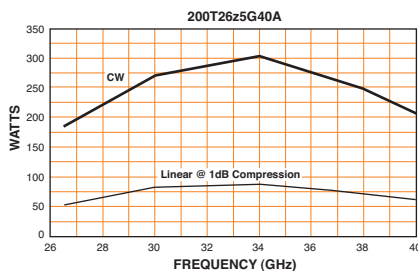
**Primary Power**  
190 - 260 VAC  
50/60 Hz, single phase  
3 kVA max.

**Connectors**

RF input	Type K female on rear panel
RF output	Type WR-42 waveguide flange on rear panel
RF output sample port	Type K female on rear panel
Interlock	DB-15 female on rear panel
GPIB	IEEE-488 on rear panel

**Cooling**  
Forced air (self contained fans), air entry and exit in rear.

**Weight** 91 kg (200 lb)  
**Size (WxHxD)** 50.3 x 43 x 81 cm / 19.8 x 17 x 32 in.



### 70T40G50 TWT Amplifier



#### 70 watts CW, 40-50 GHz

<b>Power (fundamental), CW, @ Output Flange</b>	
Minimum	70 watts, 40 GHz - 45 GHz
	50 watts, 45 GHz - 50 GHz
<b>Flatness</b>	±3dB max. at rated power
<b>Frequency Response</b>	40 - 50 GHz instantaneously
<b>Input For Rated Output</b>	1 milliwatt max.
<b>Gain (at maximum setting)</b>	47dB min.
<b>Gain Adjustment (continuous range)</b>	35dB min.
<b>Input Impedance</b>	50 ohms, VSWR 2.0:1 max.
<b>Output Impedance</b>	50 ohms, VSWR 2.5:1 typ.

**Mismatch Tolerance**  
Output power foldback protection at reflected power exceeding 20 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.

**Harmonic Distortion** Minus 15dBc typ.  
**Spurious Response (non-harmonic)** Minus 15dBc typ. (excluding harmonics)

**Primary Power**  
190 - 260 VAC  
50/60 Hz, single phase  
1.5 kVA max.

**Connectors**

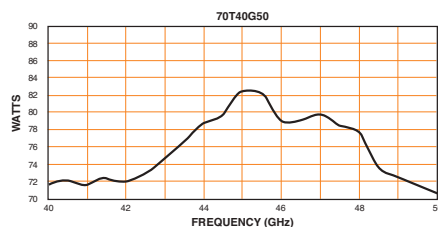
RF input	Type 2.4 mm female on rear panel
RF output	Type WR-22 waveguide flange on rear panel, all tapped
RF output sample ports (forward and reflected)	Type 2.4 mm female on rear panel
Remote Interface	IEEE-488
Interlock	DB-15 female on rear panel

**Cooling**  
Forced air (self contained fans), air entry and exit in rear.

**Weight** 42 kg (93 lb)

**Size (WxHxD)** 48.26 x 16.5 x 76.2 cm / 19 x 6.5 x 30 in.

**Export Classification** EAR99



### 100T40G50 TWT Amplifier



#### 100 watts CW, 40-50 GHz

<b>Power (fundamental), CW, @ Output Connector</b>	
Minimum	100 watts
<b>Flatness</b>	±8dB max.
<b>Frequency Response</b>	40 - 50 GHz instantaneously
<b>Input For Rated Output</b>	1 milliwatt max.
<b>Gain Adjustment (continuous range)</b>	35dB min.
<b>Input Impedance</b>	50 ohms, VSWR 2.0:1 max.
<b>Output Impedance</b>	50 ohms, VSWR 2.5:1 typ.
<b>Harmonic Distortion</b>	Minus 22dBc typ.

**Primary Power**  
190 - 260 VAC  
50/60 Hz, single phase  
1.5 kVA max.

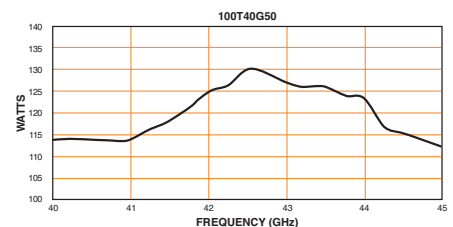
**Connectors**

RF input	Type 2.4 mm female on rear panel
RF output	Type WR-22 waveguide flange on rear panel
RF output sample ports	Type 2.4 mm female on rear panel
Interlock	DB-15 female on rear panel
GPIB	IEEE-488 female on rear panel

**Cooling**  
Forced air (self contained fans), air entry and exit in rear.

**Weight** 82 kg (180 lb)

**Size (WxHxD)** 50.3 x 43 x 76 cm / 19.8 x 17 x 30 in.



# 1 to 1.5 GHz Pulse

# 1.5 to 2 GHz Pulse

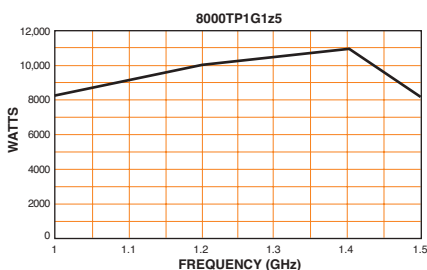
# 2 to 4 GHz Pulse

## 8000TP1G1z5 Pulse TWT Amplifier



### 8,000 watts, 1-1.5 GHz Pulse

<b>Power (fundamental), Peak Pulse, @ Output</b>	
Nominal	10,000 watts / min. 8000 watts
<b>Flatness</b>	±6dB min.
<b>Frequency Response</b>	1 - 1.5 GHz
<b>Input For Rated Output</b>	1 milliwatt max.
<b>Gain (at max. setting)</b>	69dB min.
<b>Gain Adjustment (continuous range)</b>	35dB min.
<b>Input Impedance</b>	50 ohms, VSWR 2.5:1 max.
<b>Output Impedance</b>	50 ohms, VSWR 2.5:1 typ.
<b>Mismatch Tolerance</b>	
Output pulse width foldback protection at peak reflected power exceeding 2000 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.	
<b>Pulse Capability</b>	
Pulse Width	0.07 - 40 microseconds
Pulse Rate (PRF)	100 kHz max.
Duty Cycle	1% max.
RF Rise and Fall	70 ns max. (10% - 90%)
Delay	300 ns max. from pulse input to RF 90%
Pulse Width Distortion	±30 ns max. (50% points of output pulse width compared to 50% points of input pulse width)
Pulse Off Isolation	80 dB min., 90 dB typ.
Pulse Input	TTL level, 50 ohm nominal termination
<b>Noise Power Density</b>	
(pulse on)	Minus 55dBm/Hz max., Minus 65dBm/Hz typ.
(pulse off)	Minus 140dBm/Hz typ.
<b>Harmonic Distortion</b>	
	Minus 15dBc max.
<b>Primary Power</b>	
	190 - 260 VAC
	50/60 Hz, single phase
	1 kVA max.
<b>Connectors</b>	
RF input	Type N female on rear panel
RF output	Type DIN 7-16 on rear panel
RF output forward and reflected sample ports	
	Type N female on rear panel
Pulse input	Type BNC female on rear panel
Interlock	DB-15 female on rear panel
GPIO	IEEE-488 female on rear panel
<b>Cooling</b>	
Forced air (self contained fans), air entry and exit in rear.	
<b>Weight</b>	57 kg (125 lb)
<b>Size (WxHxD)</b>	50.3 x 26 x 94 cm / 19.8 x 10.3 x 37 in.

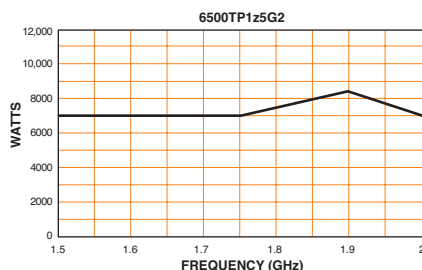


## 6500TP1z5G2 Pulse TWT Amplifier



### 6,500 watts, 1.5-2 GHz Pulse

<b>Power (fundamental), Peak Pulse, @ Output</b>	
Nominal	8000 watts / min. 6500 watts
<b>Flatness</b>	±6dB min.
<b>Frequency Response</b>	1.5 - 2 GHz
<b>Input For Rated Output</b>	1 milliwatt max.
<b>Gain (at max. setting)</b>	68dB min.
<b>Gain Adjustment (continuous range)</b>	35dB min.
<b>Input Impedance</b>	50 ohms, VSWR 2.5:1 max.
<b>Output Impedance</b>	50 ohms, VSWR 2.5:1 typ.
<b>Mismatch Tolerance</b>	
Output VSWR protection using internal isolator. 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.	
<b>Pulse Capability</b>	
Pulse Width	0.07 - 40 microseconds
Pulse Rate (PRF)	100 kHz max.
Duty Cycle	1% max.
RF Rise and Fall	30 ns max. (10% - 90%)
Delay	300 ns max. from pulse input to RF 90%
Pulse Width Distortion	±30 ns max. (50% points of output pulse width compared to 50% points of input pulse width)
Pulse Off Isolation	80 dB min., 90 dB typ.
Pulse Input	TTL level, 50 ohm nominal termination
<b>Noise Power Density</b>	
(pulse on)	Minus 55dBm/Hz max., Minus 65dBm/Hz typ.
(pulse off)	Minus 140dBm/Hz typ.
<b>Harmonic Distortion</b>	
	Minus 15dBc max.
<b>Primary Power</b>	
	190 - 260 VAC
	50/60 Hz, single phase
	1 kVA max.
<b>Connectors</b>	
RF input	Type N female on rear panel
RF output	Type DIN 7-16 on rear panel
RF output forward and reflected sample ports	
	Type N female on rear panel
Pulse input	Type BNC female on rear panel
Interlock	DB-15 female on rear panel
GPIO	IEEE-488 female on rear panel
<b>Cooling</b>	
Forced air (self contained fans), air entry and exit in rear.	
<b>Weight</b>	57 kg (125 lb)
<b>Size (WxHxD)</b>	50.3 x 26 x 94 cm / 19.8 x 10.3 x 37 in.

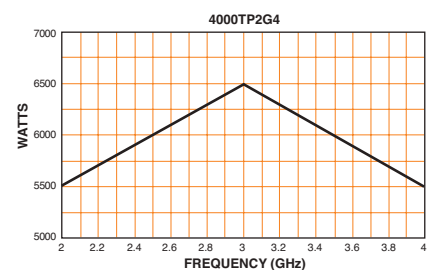


## 4000TP2G4 Pulse TWT Amplifier



### 4,000 watts, 2-4 GHz Pulse

<b>Power (fundamental), Peak Pulse, @ Output</b>	
Nominal	5800 watts / min. 4.7 kW
<b>Flatness</b>	±10dB max.
<b>Frequency Response</b>	2 - 4 GHz
<b>Input For Rated Output</b>	1 milliwatt max.
<b>Gain (at max. setting)</b>	66dB min.
<b>Gain Adjustment (continuous range)</b>	35dB min.
<b>Input Impedance</b>	50 ohms, VSWR 2.5:1 max.
<b>Output Impedance</b>	50 ohms, VSWR 2.5:1 typ.
<b>Mismatch Tolerance</b>	
Output pulse width foldback protection at peak reflected power exceeding 1000 watts. Will operate without damage 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.	
<b>Pulse Capability</b>	
Pulse Width	0.07 - 50 microseconds
Pulse Rate (PRF)	100 kHz max.
Duty Cycle	4% max.
RF Rise and Fall	35 ns max. (10% to 90%)
Delay	300 ns max. from pulse input to RF 90%
Pulse Width Distortion	±50 ns max. (50% points of output pulse width compared to 50% points of input pulse width)
Pulse Off Isolation	80 dB min., 90 dB typ.
Pulse Input	TTL level, 50 ohm nominal termination
<b>Noise Power Density</b>	
(pulse on)	Minus 57dBm/Hz max., Minus 59dBm/Hz typ.
(pulse off)	Minus 140dBm/Hz typ.
<b>Harmonic Distortion</b>	
	Minus 0dBc max.
<b>Primary Power</b>	
	208 VAC ±10%
	Three phase, 50/60 Hz
	3 kVA max.
<b>Connectors</b>	
RF input	Type N female on rear panel
RF output	Type N female on rear panel
RF output forward sample port	
	Type N female on rear panel
Pulse input	Type BNC female on rear panel
Interlock	DB-15 female on rear panel
GPIO	IEEE-488 female on rear panel
<b>Cooling</b>	
Forced air (self contained fans), air entry and exit in rear.	
<b>Weight</b>	75 kg (165 lb)
<b>Size (WxHxD)</b>	51 x 30.5 x 84 cm / 19.8 x 12 x 33 in.





## 6900TP2G4 Pulse TWT Amplifier



### 6,900 watts, 2-4 GHz Pulse

<b>Power (fundamental), Peak Pulse, @ Output</b>	
Nominal	9000 watts / min. 6900 watts
<b>Flatness</b>	±8dB min., ±4dB at rated power
<b>Frequency Response</b>	2 - 4 GHz
<b>Input For Rated Output</b>	1 milliwatt max.
<b>Gain (at max. setting)</b>	68dB min.
<b>Gain Adjustment (continuous range)</b>	35dB min.
<b>Input Impedance</b>	50 ohms, VSWR 2.5:1 max.
<b>Output Impedance</b>	50 ohms, VSWR 2.5:1 typ.
<b>Mismatch Tolerance</b>	
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.	
<b>Pulse Capability</b>	
Pulse Width	0.2 - 50 microseconds
Pulse Rate (PRF)	100 kHz max.
Duty Cycle	4% max.
RF Rise and Fall	70 ns max. (10% - 90%)
Delay	300 ns max. from pulse input to RF 90%
Pulse Width Distortion	±50 ns max. (50% points of output pulse width compared to 50% points of input pulse width)
Pulse Off Isolation	80 dB min., 90 dB typ.
Pulse Input	TTL level, 50 ohm nominal termination
<b>Noise Power Density</b>	
(pulse on)	Minus 55dBm/Hz max., Minus 84dBm/Hz typ.
(pulse off)	Minus 140dBm/Hz typ.
<b>Harmonic Distortion</b>	
	Minus 15dBc max.
<b>Primary Power</b>	
	208 VAC ±10%
	50/60 Hz, three phase, delta (4 wire)
	5 kVA max.
<b>Connectors</b>	
RF input	Type N female on rear panel
RF output	Type DIN 7-16 female on rear panel
RF output forward and reflected sample ports	Type N female on rear panel
Pulse input	Type BNC female on rear panel
Interlock	DB-15 female on rear panel
GPIB	IEEE-488 female on rear panel
<b>Cooling</b>	
	Forced air (self contained fans), air entry and exit in rear.
<b>Weight</b>	121 kg (265 lb)
<b>Size (WxHxD)</b>	50.3 x 48 x 89 cm / 19.8 x 19 x 35 in.

## 12000TP2G4 Pulse TWT Amplifier



### 12,000 watts, 2-4 GHz Pulse

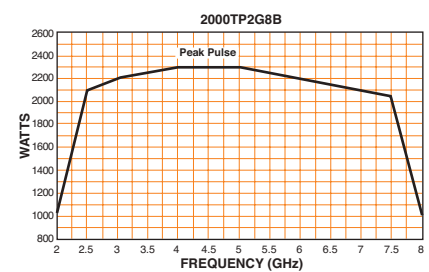
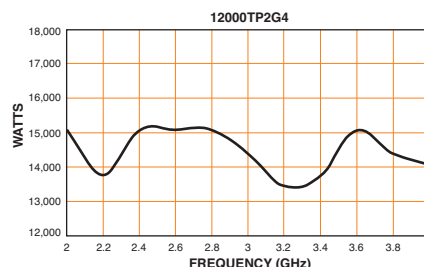
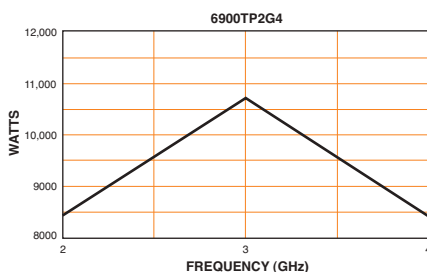
<b>Power (fundamental), Peak Pulse, @ Output</b>	
Nominal	14,000 watts / min. 12,000 watts
<b>Flatness</b>	±10dB max., ±6dB at rated power
<b>Frequency Response</b>	2 - 4 GHz
<b>Input For Rated Output</b>	1 milliwatt max.
<b>Gain (at max. setting)</b>	70.8dB min.
<b>Gain Adjustment (continuous range)</b>	35dB min.
<b>Input Impedance</b>	50 ohms, VSWR 2.5:1 max.
<b>Output Impedance</b>	50 ohms, VSWR 2.5:1 typ.
<b>Mismatch Tolerance</b>	
Output pulse width foldback protection at peak reflected power exceeding 3000 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.	
<b>Pulse Capability</b>	
Pulse Width	0.1 - 40 microseconds
Pulse Rate (PRF)	20 kHz max.
Duty Cycle	4% max.
RF Rise and Fall	150 ns max. (10% to 90%)
Delay	500 ns max. from pulse input to RF 90%
Pulse Width Distortion	±50 ns max. (50% points of output pulse width compared to 50% points of input pulse width)
Pulse Off Isolation	80 dB min., 90 dB typ.
Pulse Input	TTL level, 50 ohm nominal termination
<b>Noise Power Density</b>	
(pulse on)	Minus 55dBm/Hz max., Minus 70dBm/Hz typ.
(pulse off)	Minus 140dBm/Hz typ.
<b>Harmonic Distortion</b>	
	Minus 10dBc max.
<b>Primary Power</b>	
	208 VAC ±10%
	Three phase, delta (4-wire), 50/60 Hz
	9 kVA max.
<b>Connectors</b>	
RF input	Type N female on rear panel
RF output	Type 7-16 DIN female on rear panel
RF output forward sample ports (forward and reflected)	Type N female on rear panel
Pulse input	Type BNC female on rear panel
Interlock	DB-15 female on rear panel
GPIB	IEEE-488 female on rear panel
<b>Cooling</b>	
	Forced air (self contained fans), air entry and exit in rear.
<b>Weight</b>	273 kg (600 lb)
<b>Size (WxHxD)</b>	55.9 x 114 x 96.5 cm / 22 x 45 x 38 in.
<b>Export Classification</b>	3A999.d

## 2000TP2G8B Pulse TWT Amplifier



### 2,000 watts, 2.5 - 7.5 GHz Pulse

<b>Power (fundamental), Peak Pulse, @ Output Connector</b>	
Nominal	2200 watts / min. 1000 watts
<b>Flatness</b>	±13dB max., equalized for ±4dB max. at rated power
<b>Frequency Response</b>	2.5 - 7.5 GHz instantaneously
<b>Input For Rated Output</b>	1 milliwatt max.
<b>Gain (at max. setting)</b>	63dB min.
<b>Gain Adjustment (continuous range)</b>	35dB min.
<b>Input Impedance</b>	50 ohms, VSWR 2.5:1 max.
<b>Output Impedance</b>	50 ohms, VSWR 2.5:1 typ.
<b>Mismatch Tolerance</b>	
Output pulse width foldback protection at peak reflected power exceeding 1000 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.	
<b>Pulse Capability</b>	
Pulse Width	0.07 - 30 microseconds
Pulse Rate (PRF)	100 kHz max.
Duty Cycle	4% max.
RF Rise and Fall	30 ns max (10% to 90%)
Delay	300 ns max. from pulse input to RF 90%
Pulse Width Distortion	±30 ns max (50% points of output pulse width compared to 50% points of input pulse width)
Pulse Off Isolation	80dB min., 90dB typ.
Pulse Input	TTL level, 50 ohm nominal termination
<b>Noise Power Density</b>	
(pulse on)	Minus 70dBm/Hz max., Minus 72dBm/Hz typ.
(pulse off)	Minus 140dBm/Hz typ.
<b>Harmonic Distortion</b>	
	Minus 0dBc max., Minus 1.5dBc typ.
<b>Primary Power</b>	
	190 - 260 VAC
	Single phase, 50/60 Hz
	1.2 kVA max.
<b>Connectors</b>	
RF input	Type N female on rear panel
RF output	Type N female on rear panel
RF output sample port	Type N female on rear panel
Pulse input	Type BNC female on rear panel
Interlock	DB-15 female on rear panel
GPIB	IEEE-488 female on rear panel
<b>Cooling</b>	
	Forced air (self contained fans), air entry and exit in rear.
<b>Weight</b>	53 kg (115 lb)
<b>Size (WxHxD)</b>	50.3 x 25.4 x 82 cm / 19.8 x 10 x 32 in.



# 2.7 to 3.1 GHz

# 4 to 8 GHz Pulse

## 8000TP2z7G3z1 TWT Amplifier



### 8,000 watts CW, 2.7-3.1 GHz

**Power, CW, @ Output Connector**  
**Power (fundamental), CW, @ Output Connector**  
 Nominal 10,000 watts / min. 8000 watts

**Flatness**  
 ±6dB max.

**Frequency Response** 2.7 - 3.1 GHz instantaneously

**Input For Rated Output** 1 milliwatt max.

**Gain (at max. setting)** 69dB min.

**Gain Adjustment (continuous range)** 35dB min.

**Input Impedance** 50 ohms, VSWR 2.5:1 max.

**Output Impedance** 50 ohms, VSWR 2.5:1 typ.

**Mismatch Tolerance**  
 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.

**Noise Power Density**  
 (pulse on) Minus 55dBm/Hz max., Minus 80dBm/Hz typ.  
 (pulse off) Minus 140dBm/Hz typ.

**Harmonic Distortion**  
 Minus 20dBc max.

**Primary Power**  
 190 - 255 VAC  
 50/60 Hz, three phase, delta (4 wire)  
 2 kVA max.

**Connectors**  
 RF input Type N female on rear panel  
 RF output Type DIN 7-16 female on rear panel  
 RF output sample ports (forward and reflected) Type N female on rear panel  
 RF output Type BNC female on rear panel  
 Interlock DB-15 female on rear panel  
 GPIB IEEE-488 female on rear panel

**Cooling**  
 Forced air (self contained fans), air entry and exit in rear.

**Weight** 61 kg (135 lb)

**Size (WxHxD)**  
 50.3 x 26 x 88.9 cm / 19.8 x 10.3 x 35 in.

## 4000TP4G8 Pulse TWT Amplifier



### 4,000 watts, 4-8 GHz Pulse

**Power (fundamental), Peak Pulse, @ Output**  
 Nominal 5000 watts / min. 3.8 kW from 4 - 4.5 GHz  
 4 kW from 4.5 - 7.5 GHz, 3.8 kW from 7.5 - 8 GHz

**Flatness** ±10dB min.

**Frequency Response** 4 - 8 GHz

**Input For Rated Output** 1 milliwatt max.

**Gain (at max. setting)** 66dB min.

**Gain Adjustment (continuous range)** 35dB min.

**Input Impedance** 50 ohms, VSWR 2.5:1 max.

**Output Impedance** 50 ohms, VSWR 2.5:1 typ.

**Mismatch Tolerance**  
 Output pulse width foldback protection at peak reflected power exceeding 1000 watts. Will operate without damage 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.

**Pulse Capability**  
 Pulse Width 0.07 - 50 microseconds  
 Pulse Rate (PRF) 100 kHz max.  
 Duty Cycle 4% max.  
 RF Rise and Fall 35 ns max. (10% to 90%)  
 Delay 300 ns max. from pulse input to RF 90%

**Pulse Width Distortion**  
 ±50 ns max. (50% points of output pulse width compared to 50% points of input pulse width)

**Pulse Off Isolation** 80 dB min., 90 dB typ.

**Pulse Input** TTL level, 50 ohm nominal termination

**Noise Power Density**  
 (pulse on) Minus 65dBm/Hz max., Minus 75dBm/Hz typ.  
 (pulse off) Minus 140dBm/Hz typ.

**Harmonic Distortion**  
 Minus 0dBc max.

**Primary Power**  
 208 VAC ± 10%  
 50/60 Hz, three phase  
 2.5 kVA max.

**Connectors**  
 RF input Type N female on rear panel  
 RF output Type WRD-350 waveguide flange on rear panel  
 RF output forward sample port Type N female on rear panel  
 Pulse input Type BNC female on rear panel  
 Interlock DB-15 female on rear panel  
 GPIB IEEE-488 female on rear panel

**Cooling**  
 Forced air (self contained fans), air entry and exit in rear.

**Weight** 71 kg (155 lb)

**Size (WxHxD)**  
 See Model Configurators on spec sheet via [www.arworld.us](http://www.arworld.us)

## 7400TP4G8 Pulse TWT Amplifier



### 7,400 watts, 4-8 GHz Pulse

**Power (fundamental), Peak Pulse, @ Output**  
 Nominal 10,000 watts / min. 7400 watts

**Flatness** ±10dB min., ±5dB at rated power

**Frequency Response** 4 - 8 GHz

**Input For Rated Output** 1 milliwatt max.

**Gain (at max. setting)** 69dB min.

**Gain Adjustment (continuous range)** 35dB min.

**Input Impedance** 50 ohms, VSWR 2.5:1 max.

**Output Impedance** 50 ohms, VSWR 2.5:1 typ.

**Mismatch Tolerance**  
 Output pulse width foldback protection at peak reflected power exceeding 2000 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.

**Pulse Capability**  
 Pulse Width 0.2 - 50 microseconds  
 Pulse Rate (PRF) 100 kHz max.  
 Duty Cycle 4% max.  
 RF Rise and Fall 70 ns max. (10% - 90%)  
 Delay 500 ns max. from pulse input to RF 90%

**Pulse Width Distortion**  
 ±50 ns max. (50% points of output pulse width compared to 50% points of input pulse width)

**Pulse Off Isolation** 80 dB min., 90 dB typ.

**Pulse Input** TTL level, 50 ohm nominal termination

**Noise Power Density**  
 (pulse on) Minus 65dBm/Hz max., Minus 85dBm/Hz typ.  
 (pulse off) Minus 140dBm/Hz typ.

**Harmonic Distortion**  
 Minus 12dBc typ.

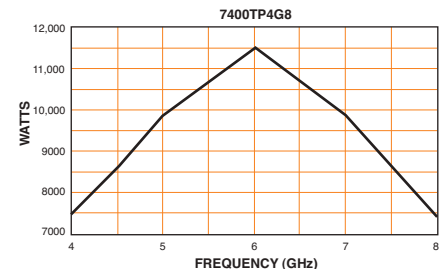
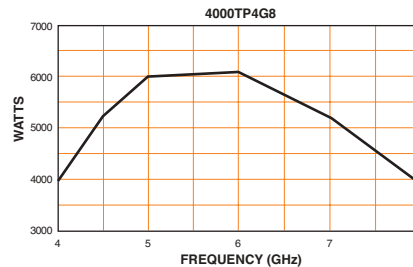
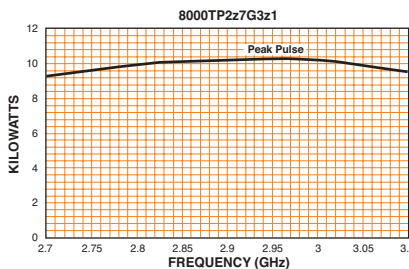
**Primary Power**  
 208 VAC ± 10%  
 50/60 Hz, three phase, delta (4 wire)  
 5 kVA max.

**Connectors**  
 RF input Type N female on rear panel  
 RF output Type WRD-350 waveguide flange on rear panel  
 RF output forward and reflected sample ports Type N female on rear panel  
 Pulse input Type BNC female on rear panel  
 Interlock DB-15 female on rear panel  
 GPIB IEEE-488 female on rear panel

**Cooling**  
 Forced air (self contained fans), air entry and exit in rear.

**Weight** 123 kg (270 lb)

**Size (WxHxD)**  
 50.3 x 53 x 91 cm / 19.8 x 24 x 36 in.

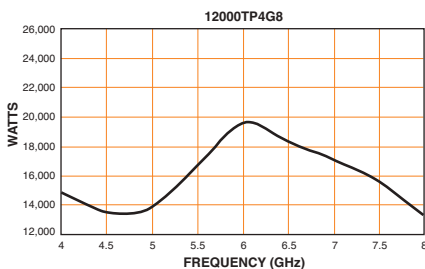


## 12000TP4G8 Pulse TWT Amplifier



### 12,000 watts, 4-8 GHz Pulse

<b>Power (fundamental), Peak Pulse, @ Output</b>	
Nominal	14,000 watts / min. 12,000 watts
Flatness	±10dB max., ±6dB at rated power
Frequency Response	4 - 8 GHz
Input For Rated Output	1 milliwatt max.
Gain (at max. setting)	70.8dB min.
Gain Adjustment (continuous range)	35dB min.
Input Impedance	50 ohms, VSWR 2.5:1 max.
Output Impedance	50 ohms, VSWR 2.5:1 typ.
<b>Mismatch Tolerance</b>	
Output pulse width foldback protection at peak reflected power exceeding 3000 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.	
<b>Pulse Capability</b>	
Pulse Width	0.1 - 40 microseconds
Pulse Rate (PRF)	20 kHz max.
Duty Cycle	4% max.
RF Rise and Fall	150 ns max. (10% to 90%)
Delay	500 ns max. from pulse input to RF 90%
Pulse Width Distortion	±50 ns max. (50% points of output pulse width compared to 50% points of input pulse width)
Pulse Off Isolation	80 dB min., 90 dB typ.
Pulse Input	TTL level, 50 ohm nominal termination
<b>Noise Power Density</b>	
(pulse on)	Minus 55dBm/Hz max., Minus 70dBm/Hz typ.
(pulse off)	Minus 140dBm/Hz typ.
<b>Harmonic Distortion</b>	
	Minus 10dBc max.
<b>Primary Power</b>	
	208 VAC ±10%
	Three phase, delta (4-wire), 50/60 Hz
	9 kVA max.
<b>Connectors</b>	
RF input	Type N female on rear panel
RF output	Type WRD-350 on rear panel
RF output forward sample ports (forward and reflected)	Type N female on rear panel
Pulse input	Type BNC female on rear panel
Interlock	DB-15 female on rear panel
GPIO	IEEE-488 female on rear panel
<b>Cooling</b>	
	Forced air (self contained fans), air entry and exit in rear.
<b>Weight</b>	273 kg (600 lb)
<b>Size (WxHxD)</b>	159.3 x 114 x 96.5 cm / 22 x 45 x 38 in.
<b>Export Classification</b>	3A999.d

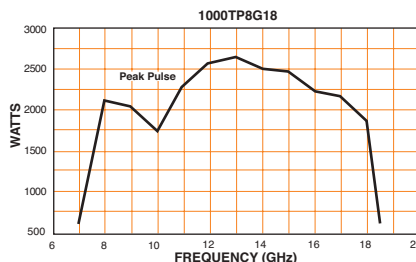


## 1000TP8G18 Pulse TWT Amplifier



### 1,000 watts, 7.5-18 GHz Pulse

<b>Power (fundamental), Peak Pulse, @ Output Connector</b>	
Nominal	1800 watts / min. 1000 watts
Flatness	±8dB max., equalized for ±3dB max. at rated power
Frequency Response	7.5 - 18 GHz instantaneously
Input For Rated Output	1 milliwatt max.
Gain (at max. setting)	60dB min.
Gain Adjustment (continuous range)	35dB min.
Input Impedance	50 ohms, VSWR 2.5:1 max.
Output Impedance	50 ohms, VSWR 2.5:1 typ.
<b>Mismatch Tolerance</b>	
Output pulse width foldback protection at average reflected power exceeding 500 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.	
<b>Pulse Capability</b>	
Pulse Width	0.07 - 100 microseconds
Pulse Rate (PRF)	100 kHz max.
Duty Cycle	4% max.
RF Rise and Fall	30 ns max (10% to 90%)
Delay	300 ns max. from pulse input to RF 90%
Pulse Width Distortion	±30ns max (50% points of output pulse width compared to 50% points of input pulse width)
Pulse Off Isolation	80dB min. / 90dB typ.
<b>Noise Power Density</b>	
(pulse on)	Minus 57dBm/Hz max., Minus 58dBm/Hz typ.
(pulse off)	Minus 140dBm/Hz typ.
<b>Harmonic Distortion</b>	
	Minus 2dBc max., Minus 3dBc typ.
<b>Primary Power</b>	
	190 - 260 VAC
	50/60 Hz, single phase
	1.5 kVA max.
<b>Connectors</b>	
RF input	Type N female on rear panel
RF output	Type WRD-750D24 waveguide flange on rear panel
RF output sample port	Type N female on rear panel
Pulse input	Type BNC female on rear panel
Interlock	DB-15 female on rear panel
GPIO	IEEE-488 female on rear panel
<b>Cooling</b>	
	Forced air (self contained fans), air entry and exit in rear.
<b>Weight</b>	52 kg (115 lb)
<b>Size (WxHxD)</b>	50.3 x 25.4 x 69 cm / 19.8 x 10 x 27 in.

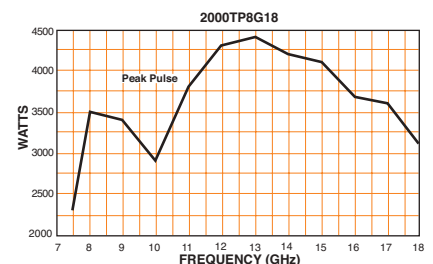


## 2000TP8G18 Pulse TWT Amplifier



### 2,000 watts, 7.5-18 GHz Pulse

<b>Power (fundamental), Peak Pulse, @ Output Connector</b>	
Nominal	2500 watts / min. 2000 watts
Flatness	±8dB max., equalized for ±3dB max. at rated power
Frequency Response	7.5 - 18 GHz instantaneously
Input For Rated Output	1 milliwatt max.
Gain (at max. setting)	63dB min.
Gain Adjustment (continuous range)	35dB min.
Input Impedance	50 ohms, VSWR 2.5:1 max.
Output Impedance	50 ohms, VSWR 2.5:1 typ.
<b>Mismatch Tolerance</b>	
Output pulse width foldback protection at average reflected power exceeding 1000 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.	
<b>Pulse Capability</b>	
Pulse Width	0.07 - 30 microseconds
Pulse Rate (PRF)	100 kHz max.
Duty Cycle	4% max.
RF Rise and Fall	30 ns max (10% to 90%)
Delay	300 ns max. from pulse input to RF 90%
Pulse Width Distortion	±30ns max (50% points of output pulse width compared to 50% points of input pulse width)
Pulse Off Isolation	80dB min. / 90dB typ.
<b>Noise Power Density</b>	
(pulse on)	Minus 55dBm/Hz max., Minus 58dBm/Hz typ.
(pulse off)	Minus 140dBm/Hz typ.
<b>Harmonic Distortion</b>	
	Minus 18dBc max., Minus 20dBc typ.
<b>Primary Power</b>	
	190 - 260 VAC
	50/60 Hz, single phase
	3 kVA max.
<b>Connectors</b>	
RF input	Type N female on rear panel
RF output	Type WRD-750D24 waveguide flange on rear panel
RF output sample port	Type N female on rear panel
Pulse input	Type BNC female on rear panel
Interlock	DB-15 female on rear panel
GPIO	IEEE-488 female on rear panel
<b>Cooling</b>	
	Forced air (self contained fans), air entry and exit in rear.
<b>Weight</b>	72 kg (170 lb)
<b>Size (WxHxD)</b>	50.3 x 39.4 x 77.5 cm / 19.8 x 15.5 x 30.5 in.



# 8 to 10 GHz Pulse

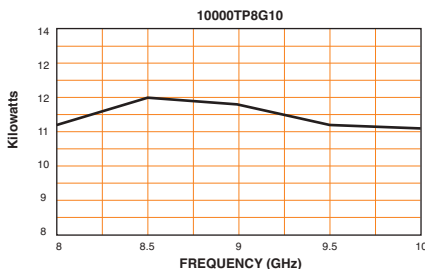
# 8 to 12 GHz Pulse

## 10000TP8G10 Pulse TWT Amplifier



### 10,000 watts, 8-10 GHz Pulse

<b>Power (fundamental), Peak Pulse, @ Output</b>	
Nominal	11000 watts / min. 10000 watts
Flatness	±6dB min.
Frequency Response	8 - 10 GHz
Input For Rated Output	1 milliwatt max.
Gain (at max. setting)	70dB min.
Gain Adjustment (continuous range)	35dB min.
Input Impedance	50 ohms, VSWR 2.5:1 max.
Output Impedance	50 ohms, VSWR 2.5:1 typ.
<b>Mismatch Tolerance</b>	
Output pulse width foldback protection at peak reflected power exceeding 5000 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.	
<b>Pulse Capability</b>	
Pulse Width	0.07 - 40 microseconds
Pulse Rate (PRF)	100 kHz max.
Duty Cycle	4% max.
RF Rise and Fall	30 ns max. (10% - 90%)
Delay	300 ns max. from pulse input to RF 90%
Pulse Width Distortion	±30 ns max. (50% points of output pulse width compared to 50% points of input pulse width)
Pulse Off Isolation	80 dB min., 90 dB typ.
Pulse Input	TTL level, 50 ohm nominal termination
<b>Noise Power Density</b>	
(pulse on)	Minus 65dBm/Hz max., Minus 69dBm/Hz typ.
(pulse off)	Minus 140dBm/Hz typ.
<b>Harmonic Distortion</b>	
	Minus 15dBc max.
<b>Primary Power</b>	
	190-260 VAC
	50/60 Hz single phase
	2.5 KVA max.
<b>Connectors</b>	
RF input	Type N precision female on rear panel
RF output	Type WR90 waveguide flange on rear panel
RF output forward and reflected sample ports	
	Type N precision female on rear panel
Pulse input	Type BNC female on rear panel
Interlock	DB-15 female on rear panel
GPIB	IEEE-488 female on rear panel
<b>Cooling</b>	
Forced air (self contained fans), air entry and exit in rear.	
<b>Weight</b>	107 kg (235 lb)
<b>Size (WxHxD)</b>	50.3 x 49 x 74 cm / 19.8 x 19 x 29 in.

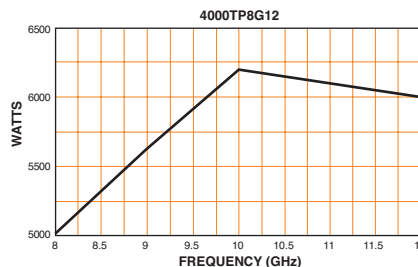


## 4000TP8G12 Pulse TWT Amplifier



### 4,000 watts, 8-12 GHz Pulse

<b>Power (fundamental), Peak Pulse, @ Output</b>	
Nominal	5500 watts / min. 4200 watts
Flatness	±10dB max.
Frequency Response	8 - 12 GHz
Input For Rated Output	1 milliwatt max.
Gain (at max. setting)	66dB min.
Gain Adjustment (continuous range)	35dB min.
Input Impedance	50 ohms, VSWR 2.5:1 max.
Output Impedance	50 ohms, VSWR 2.5:1 typ.
<b>Mismatch Tolerance</b>	
Output pulse width foldback protection at peak reflected power exceeding 1000 watts. Will operate without damage 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.	
<b>Pulse Capability</b>	
Pulse Width	0.07 - 50 microseconds
Pulse Rate (PRF)	100 kHz max.
Duty Cycle	4% max.
RF Rise and Fall	35 ns max. (10% to 90%)
Delay	300 ns max. from pulse input to RF 90%
Pulse Width Distortion	±50 ns max. (50% points of output pulse width compared to 50% points of input pulse width)
Pulse Off Isolation	80 dB min., 90 dB typ.
Pulse Input	TTL level, 50 ohm nominal termination
<b>Noise Power Density</b>	
(pulse on)	Minus 57dBm/Hz max., Minus 59dBm/Hz typ.
(pulse off)	Minus 140dBm/Hz typ.
<b>Harmonic Distortion</b>	
	Minus 10dBc max.
<b>Primary Power</b>	
	208 VAC ± 10% or 190 - 260 VAC
	50/60 Hz, three phase or single phase
	3 kVA max.
<b>Connectors</b>	
RF input	Type N female on rear panel
RF output	Type WRD-90 waveguide flange on rear panel
RF output forward sample port	
	Type N female on rear panel
Pulse input	Type BNC female on rear panel
Interlock	DB-15 female on rear panel
GPIB	IEEE-488 female on rear panel
<b>Cooling</b>	
Forced air (self contained fans), air entry and exit in rear.	
<b>Weight</b>	75 kg (165 lb)
<b>Size (WxHxD)</b>	51 x 44.5 x 69 cm / 19.8 x 17.5 x 27 in.

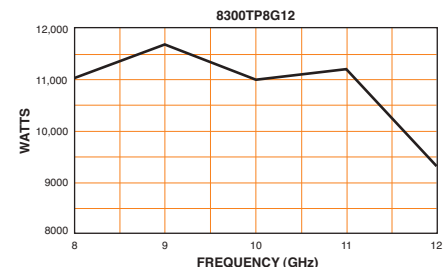


## 8300TP8G12 Pulse TWT Amplifier



### 8,300 watts, 8-12 GHz Pulse

<b>Power (fundamental), Peak Pulse, @ Output</b>	
Nominal	10,000 watts / min. 8300 watts
Flatness	±10dB max., ±5dB at rated power
Frequency Response	8 - 12 GHz
Input For Rated Output	1 milliwatt max.
Gain (at max. setting)	69dB min.
Gain Adjustment (continuous range)	35dB min.
Input Impedance	50 ohms, VSWR 2.5:1 max.
Output Impedance	50 ohms, VSWR 2.5:1 typ.
<b>Mismatch Tolerance</b>	
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.	
<b>Pulse Capability</b>	
Pulse Width	0.2 - 50 microseconds
Pulse Rate (PRF)	100 kHz max.
Duty Cycle	4% max.
RF Rise and Fall	70 ns max. (10% - 90%)
Delay	500 ns max. from pulse input to RF 90%
Pulse Width Distortion	±50 ns max. (50% points of output pulse width compared to 50% points of input pulse width)
Pulse Off Isolation	80 dB min., 90 dB typ.
Pulse Input	TTL level, 50 ohm nominal termination
<b>Noise Power Density</b>	
(pulse on)	Minus 70dBm/Hz max., Minus 73dBm/Hz typ.
(pulse off)	Minus 140dBm/Hz typ.
<b>Harmonic Distortion</b>	
	Minus 15dBc max.
<b>Primary Power</b>	
	208 VAC ± 10%
	50/60 Hz, three phase, delta (4 wire)
	5 kVA max.
<b>Connectors</b>	
RF input	Type N precision female on rear panel
RF output	Type WR-90 waveguide flange on rear panel
RF output forward and reflected sample ports	
	Type N precision female on rear panel
Pulse input	Type BNC female on rear panel
Interlock	DB-15 female on rear panel
GPIB	IEEE-488 female on rear panel
<b>Cooling</b>	
Forced air (self contained fans), air entry and exit in rear.	
<b>Weight</b>	121 kg (265 lb)
<b>Size (WxHxD)</b>	50.3 x 43 x 84 cm / 19.8 x 17 x 33 in.



# Microwave TWT Amplifiers

## 8 to 12 GHz Pulse

# 12 to 18 GHz Pulse

### 20000TP8G12 Pulse TWT Amplifier



#### 20,000 watts, 8-12 GHz Pulse

<b>Power (fundamental), Peak Pulse, @ Output</b>	
Nominal	22,000 watts / min. 20,000 watts
Flatness	±10dB max., ±6dB at rated power
Frequency Response	8 - 12 GHz
Input For Rated Output	1 milliwatt max.
Gain (at max. setting)	73dB min.
Gain Adjustment (continuous range)	35dB min.
Input Impedance	50 ohms, VSWR 2.5:1 max.
Output Impedance	50 ohms, VSWR 2.5:1 typ.
<b>Mismatch Tolerance</b>	
Output pulse width foldback protection at peak reflected power exceeding 5000 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.	
<b>Pulse Capability</b>	
Pulse Width	0.1 - 40 microseconds
Pulse Rate (PRF)	20 kHz max.
Duty Cycle	4% max.
RF Rise and Fall	150 ns max. (10% to 90%)
Delay	500 ns max. from pulse input to RF 90%
Pulse Width Distortion	±50 ns max. (50% points of output pulse width compared to 50% points of input pulse width)
Pulse Off Isolation	80 dB min., 90 dB typ.
Pulse Input	TTL level, 50 ohm nominal termination
<b>Noise Power Density</b>	
(pulse on)	Minus 65dBm/Hz max., Minus 85dBm/Hz typ.
(pulse off)	Minus 140dBm/Hz typ.
<b>Harmonic Distortion</b>	
Minus 19dBc max.	
<b>Primary Power</b>	
208 VAC ±10%	
Three phase, delta (4-wire), 50/60 Hz	
12 kVA max.	
<b>Connectors</b>	
RF input	Type N female on rear panel
RF output	Type WRD-90 female on rear panel
RF output forward sample ports (forward and reflected)	Type N female on rear panel
Pulse input	Type BNC female on rear panel
Interlock	DB-15 female on rear panel
GPIO	IEEE-488 female on rear panel
<b>Cooling</b>	
Forced air (self contained fans), air entry and exit in rear.	
Weight	575 kg (1250 lb)
Size (WxHxD)	57.5 x 196 x 82.5 cm / 22.6 x 77.2 x 32.5 in.
Export Classification	3A999.d

### 3000TP12G18 Pulse TWT Amplifier



#### 3,000 watts, 12-18 GHz Pulse

<b>Power (fundamental), Peak Pulse, @ Output</b>	
Nominal	3800 watts / min. 3000 watts
Flatness	±10dB max.
Frequency Response	12 - 18 GHz
Input For Rated Output	1 milliwatt max.
Gain (at max. setting)	65dB min.
Gain Adjustment (continuous range)	35dB min.
Input Impedance	50 ohms, VSWR 2.5:1 max.
Output Impedance	50 ohms, VSWR 2.5:1 typ.
<b>Mismatch Tolerance</b>	
Output pulse width foldback protection at peak reflected power exceeding 1000 watts. Will operate without damage 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.	
<b>Pulse Capability</b>	
Pulse Width	0.07 - 50 microseconds
Pulse Rate (PRF)	100 kHz max.
Duty Cycle	4% max.
RF Rise and Fall	30 ns max. (10% to 90%)
Delay	300 ns max. from pulse input to RF 90%
Pulse Width Distortion	±30 ns max. (50% points of output pulse width compared to 50% points of input pulse width)
Pulse Off Isolation	80 dB min., 90 dB typ.
Pulse Input	TTL level, 50 ohm nominal termination
<b>Noise Power Density</b>	
(pulse on)	Minus 55dBm/Hz max., Minus 65dBm/Hz typ.
(pulse off)	Minus 140dBm/Hz typ.
<b>Harmonic Distortion</b>	
Minus 8dBc max.	
<b>Primary Power</b>	
190 - 260 VAC	
50/60 Hz, single phase	
2 kVA max.	
<b>Connectors</b>	
RF input	Type N female on rear panel
RF output	Type WR-62 waveguide flange on rear panel
RF output forward sample port	Type N female on rear panel
Pulse input	Type BNC female on rear panel
Interlock	DB-15 female on rear panel
GPIO	IEEE-488 female on rear panel
<b>Cooling</b>	
Forced air (self contained fans), air entry and exit in rear.	
Weight	52 kg (115 lb)
Size (WxHxD)	50.3 x 26 x 81 cm / 19.8 x 10 x 31.9 in.

### 5700TP12G18 Pulse TWT Amplifier



#### 5,700 watts, 12-18 GHz Pulse

<b>Power (fundamental), Peak Pulse, @ Output</b>	
Nominal	7000 watts / min. 5700 watts
Flatness	±10dB min., ±5dB at rated power
Frequency Response	12 - 18 GHz
Input For Rated Output	1 milliwatt max.
Gain (at max. setting)	67dB min.
Gain Adjustment (continuous range)	35dB min.
Input Impedance	50 ohms, VSWR 2.5:1 max.
Output Impedance	50 ohms, VSWR 2.5:1 typ.
<b>Mismatch Tolerance</b>	
Output pulse width foldback protection at peak reflected power exceeding 3000 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.	
<b>Pulse Capability</b>	
Pulse Width	0.2 - 50 microseconds
Pulse Rate (PRF)	100 kHz max.
Duty Cycle	4% max.
RF Rise and Fall	70 ns max. (10% - 90%)
Delay	500 ns max. from pulse input to RF 90%
Pulse Width Distortion	±50 ns max. (50% points of output pulse width compared to 50% points of input pulse width)
Pulse Off Isolation	80 dB min., 90 dB typ.
Pulse Input	TTL level, 50 ohm nominal termination
<b>Noise Power Density</b>	
(pulse on)	Minus 55dBm/Hz max., Minus 80dBm/Hz typ.
(pulse off)	Minus 140dBm/Hz typ.
<b>Harmonic Distortion</b>	
Minus 15dBc max.	
<b>Primary Power</b>	
208 ±10% VAC	
50/60 Hz, three phase, delta (4 wire)	
5 kVA max.	
<b>Connectors</b>	
RF input	Type N precision female on rear panel
RF output	Type WR-62 waveguide flange on rear panel
RF output forward and reflected sample ports	Type N precision female on rear panel
Pulse input	Type BNC female on rear panel
Interlock	DB-15 female on rear panel
GPIO	IEEE-488 female on rear panel
<b>Cooling</b>	
Forced air (self contained fans), air entry and exit in rear.	
Weight	121 kg (265 lb)
Size (WxHxD)	50.3 x 43 x 84 cm / 19.8 x 17 x 33 in.

