

## Hewlett Packard Model 8111A Pulse/Function Generator Specifications

<b>50 W load resistance</b>		
<b>Waveforms</b>	Sine, triangle, ramp, square, pulse, haversine, haversine, haversine	
<b>TIMING</b>		
<b>Frequency</b>		
<b>Range</b>	1.00 Hz to 20.0 MHz (3 digit resolution)	
<b>Accuracy</b>	(50% duty cycle): 5% ( $\pm$ 10% below 10 Hz)	
<b>Jitter</b>	< 0.1% + 50 ps	
<b>Stability</b>	$\pm$ 0.2% (1 hour), $\pm$ 0.5% (24 hours)	
<b>Duty Cycle (sine, triangle, square, haversine)</b>		
	<b>Calibrated</b>	<b>Variable</b> (below 1 MHz)
<b>Range</b>	50% nominal	10% to 90%
<b>Resolution</b>	2 digits	2 digits
<b>Accuracy</b>	$\pm$ 1 digit	( $\pm$ 3 in range 20 to 80%)
<b>PULSE WIDTH</b>		
<b>Range</b>	25.0 ns to 100 ms (3-digit resolution)	
<b>Accuracy</b>	$\pm$ 5% $\pm$ 2 ns	
<b>OUTPUT CHARACTERISTICS</b>		
<b>Amplitude</b>		
<b>Range</b>	1.6 m Vpp to 16.00 Vpp (3 1/2 digit resolution)	
<b>Accuracy</b>	$\pm$ 5% (at 1 kHz for sine and triangle)	
<b>Flatness (sine, triangle)</b>	$\pm$ 3% (+10%, -15% above 1 MHz)	
<b>Offset</b>		
<b>Range</b>	0.00 mV to $\pm$ 8.00 V (3-digit resolution)	
<b>Accuracy</b>	$\pm$ 5% setting $\pm$ 2% amplitude $\pm$ 20% mV (ampl $\geq$ 160 mV p-p), $\pm$ 5% setting $\pm$ 2% amplitude $\pm$ 1 mV (ampl < 160 m Vpp)	
<b>Distortion</b>	THD (1 Hz-1 MHz) < 3% (-30 dB); harmonics (1 MHz to 20 MHz) < -26 dBc. Distortion may increase by 3 dB below 10°C and above 45°C	
<b>Linearity (triangle)</b>	< $\pm$ 3% (< $\pm$ 1% below 1 MHz)	
<b>Pulse and Squarewave Performance</b>		
<b>Transitions</b>	< 10 ns	
<b>Perturbations</b>	< $\pm$ 5% (< 10% below 0.16 V p-p)	
<b>Output Impedance</b>	$\pm$ 50 W $\pm$ 5%	
<b>MODES</b>		
<b>VCO Range</b>	Normal*, trigger*, gate*, VCO and (Option 001) burst*	
<b>Burst Length</b>	1 to 1999 periods for all waveforms	
<b>GENERAL</b>		
<b>Repeatability</b>	Factor 2.5 better than accuracy	
<b>Environmental</b>		
<b>Storage Temperature</b>	-40°C to + 75°C	
<b>Operating Temperature</b>	0°C to 55°C	
<b>Humidity</b>	95% RH, 0°C to 40°C	
<b>Power</b>	100/120/220/240 V rms; +5% -10%; 48 to 440 Hz; 70 VA max	
<b>Weight</b>	Net, 4.6 kg (10 lb); shipping, 6.6 kg (15 lb)	
<b>Size</b>	89 mm H X 212.3 mm W X 345 mm D (3.5 in X 8.36 in X 13.6 in)	
*Adjustable start-phase for haversine, haversine, haversine		