VKL-8301
klystrons for particle accelerator applications. The VKL-8301 is a 1300 MHz, 10 MW peak power, 150 kW average power, long-pulse multiple beam klystron for the European X-FEL and International Linear Collider (ILC) projects.

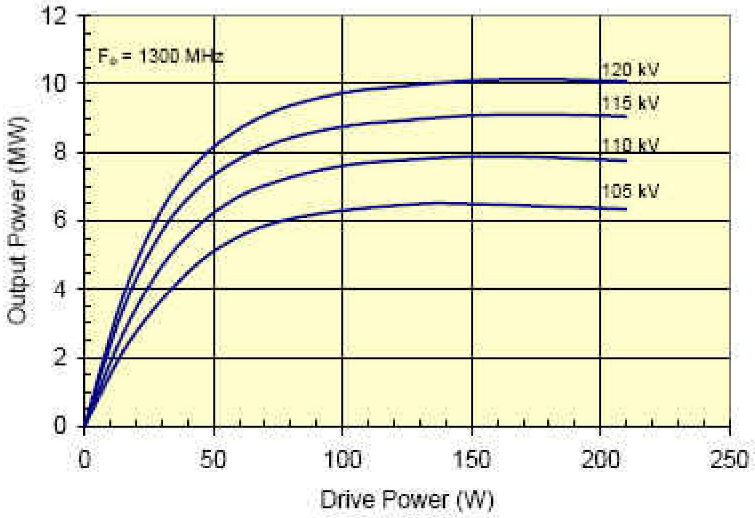
Key Features

- Multiple beams result in lower operating voltages
- Higher-order-mode interaction results in long cathode lifetimes (>100,000 hours predicted)
- Six beam, cathode-pulsed electron gun
- Six cavity RF circuit including one second-harmonic cavity for enhanced efficiency
- Dual WR650 waveguide outputs
- Collectors capable of dissipating the entire beam power

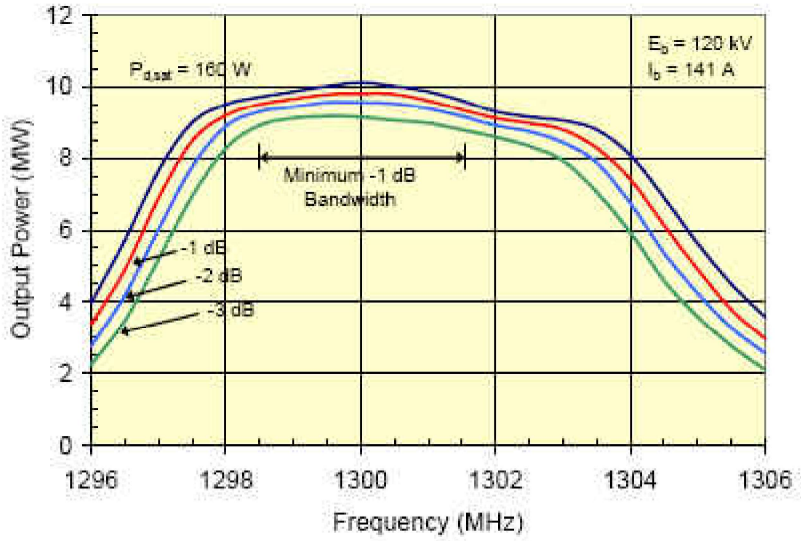
Operating Parameters

Frequency	1300	MHz
Peak Power Output	10	MWatts
Average Output Power	150	kWatts
Peak Beam Voltage	120	kV
Peak Beam Current	141	A
Efficiency	59	%
Saturated Gain	48	dB
-1dB Bandwidth	±3.5	MHz
Duty	1.5	%
RF Pulse width	1.50	msec
Cathode Loading	2.2	A/cm²
Heater Voltage	24	V
Heater Current	22	A
Collector Coolant Flow	40 / 150	gpm / lpm
Body-Window Coolant Flow	1.5 / 5.5	gpm / lpm
Electromagnet:		
Power	5.0	W
Coolant Flow	2.5 / 9.5	gpm / lpm
Size with Accessories:		
Klystron Length	101 / 257	inches / cm
Klystron Weight	2000 / 900	pounds / kg
Electromagnet Diameter	35 / 88	in/cm
Electromagnet Weight	3200 / 1450	lbs /kg

Transfer Curve



Frequency Response



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