QUASIOPTICAL SOURCE

QS2-500 sn170454

I. SPECIFICATIONS

1. FREQUENCY RANGE, GHz ..... 95…530
2. CATHODE VOLTAGE (NEGATIVE), V ..... 500…2600
3. CATHODE CURRENT, mA 19
4. HEATER CURRENT, A 2.15
5. OUTPUT POWER, mW……..up to 25

II. CONTROL POINT PARAMETERS

Cathode current is varies with Cathode voltage and Heater current settings. The control point parameters are defined to prevent cathode damage due to excessive current

1. Cathode voltage, V	**1500**
2. Cathode current, mA	**19**
3. Heater current, A	**2.15**
4. Grid Voltage, V	200
5. Output frequency, GHz	145

If cathode current at the control cathode voltage exceeds specified value, reduce the heater current to prevent cathode degradation. BWO can not be repaired if the cathode is damaged.

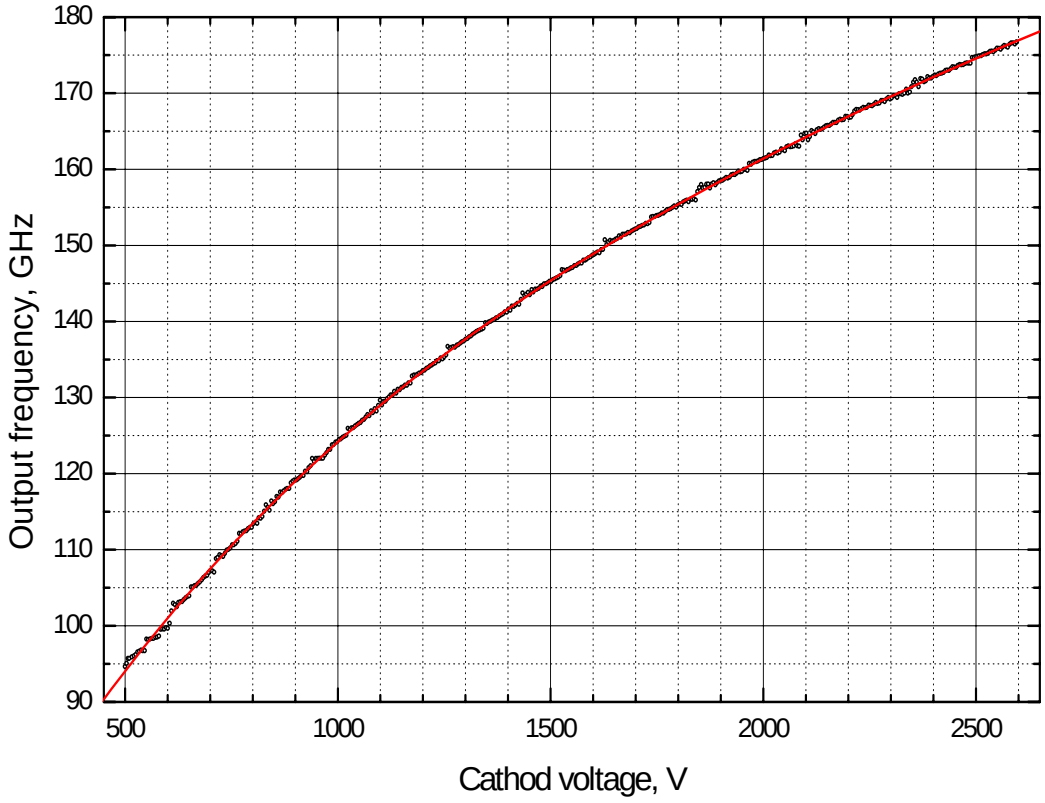
III. CALIBRATION POLYNOMINAL

$$U(f) = (U_0 + U_1 f + U_2 f^2 + U_3 f^3)^2,$$

2) $f(U) = f_0 + f_1\sqrt{U} + f_2 U + f_3 U^{3/2},$ U inVolts, f in GHz

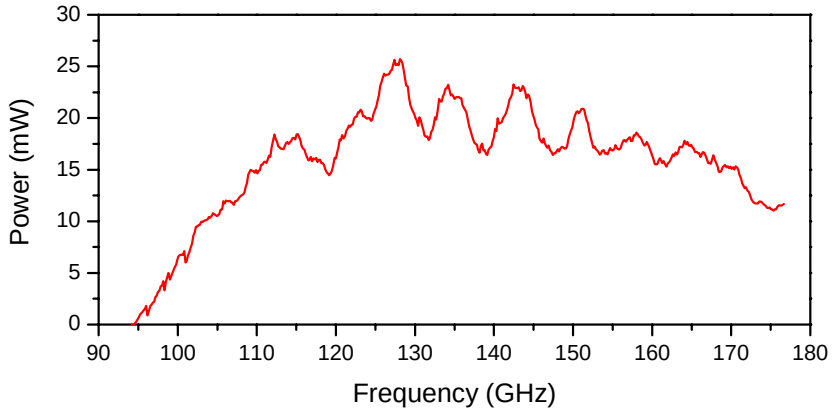
U_0= -5,9287153380	**f_0= 7,2964056290**
U_1= 0,3488242553	**f_1= 4,2487434310**
U_2= -0,0008957850	**f_2= -0,0163993812**
U_3= 0,0000042008	**f_3= -0,0000338324**

VI. CALIBRATION CURVE

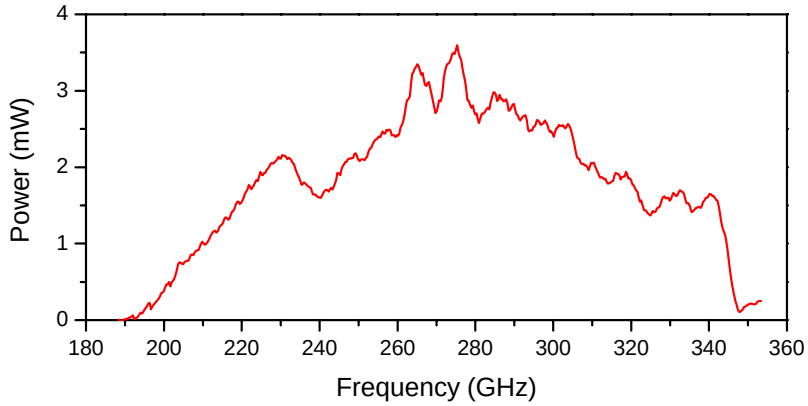


V. OUTPUT POWER PATTERN

QS2-500 without any frequency multipliers



QS2-500 with a frequency doubler



QS2-500 with a frequency tripler