



## QUASIOPTICAL SOURCE

**QS3-120 (OV-71) sn180477**

### I. SPECIFICATIONS

1. OPERATION RANGE, GHz ..... 70.3 ÷ 119.7
2. CATHODE VOLTAGE (negative), V ..... 400÷ 1500
3. CATHODE CURRENT, mA ..... 16-19
4. HEATER CURRENT, A..... 2.01
5. GRID VOLTAGE (positive), V ..... 200
6. OUTPUT POWER, mW ..... up to 30

### 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*

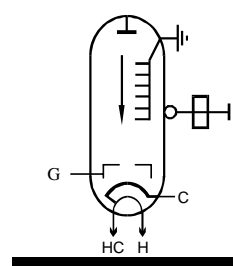
1. Cathode voltage, V	<b>900</b>
2. Cathode current, mA	<b>16</b>
3.Heater current, A	<b>2.04</b>
4.Grid voltage, V	200
5.Output frequency, GHz	98.6

*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. SCHEME OF CONNECTION OF ELECTRODES

Sign	Name of electrode	Color
HC	heater+cathode	brown
H	heater	yellow
G	green	green

**Note:**  
Body of BWO tube must be connected to the ground.



### VI. CALIBRATION POLYNOMIAL

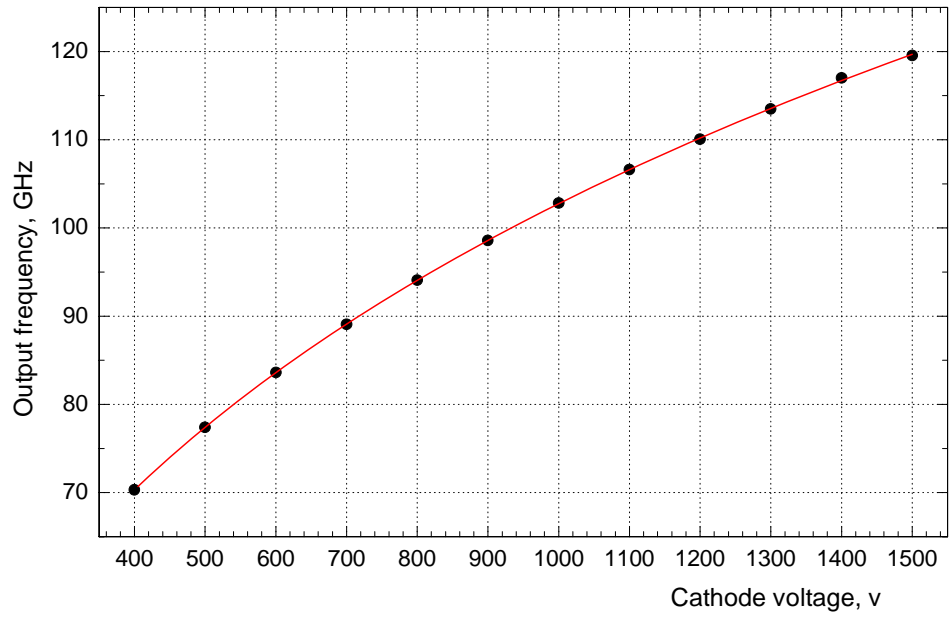
$$(1) U(f) = (U_0 + U_1 f + U_2 f^2 + U_3 f^3)^2,$$

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

U in volts, f in GHz

$U_0 = -0.5647067666$	$f_0 = -1.8814399124$
$U_1 = 0.2841000420$	$f_1 = 4.1886497461$
$U_2 = -0.0002350349$	$f_2 = -0.0309657796$
$U_3 = 0.0000050485$	$f_3 = 0.0000995443$

## V. CALIBRATION CURVE



## VI. OUTPUT POWER PATTERN

