

# QS1-260-2100



## Terahertz Generator

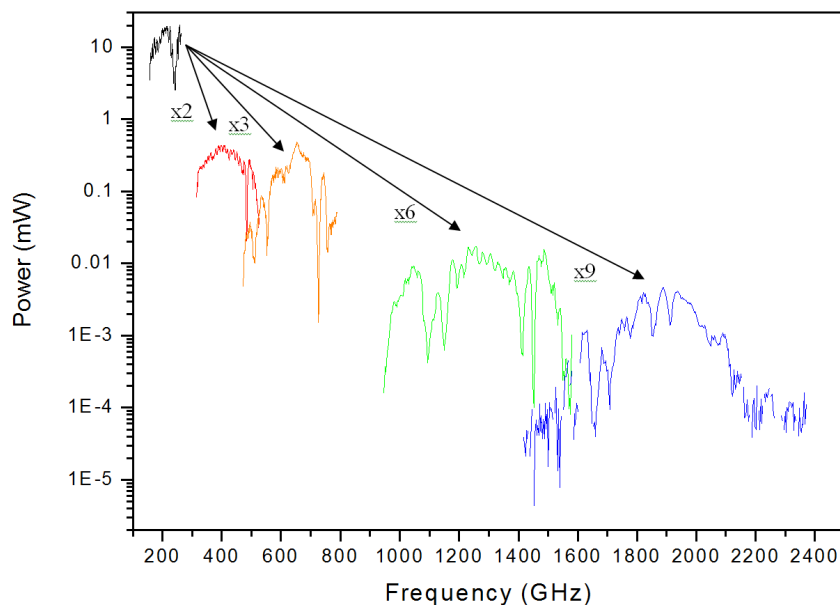
### Product Description:

Our lowest frequency QS1 is the QS1-260, which has a maximum output frequency of 260 GHz. However, this system can be combined with multipliers to achieve the largest functional range of any of our BWO's. It is one of only two BWO's that can currently be multiplied to above 2 THz.

#### Key features include:

- Spectral range: 160-2100GHz
- Spectral resolution: 1 - 20 MHz
- Water cooled system
- User choice of compact magnet for single tube or larger universal BWO magnet

### Transmission Setup:



### Product Specifications:

Model	Highest Spectral Range (GHz)	Output Power (mW)
QS1-260	160-260	up to 20
QS1-260-500	320-520	up to 0.5
QS1-260-750	480-780	up to 0.5
QS1-260-1500	960-1560	up to 0.02
QS1-260-2100	1440-2340	up to 0.005

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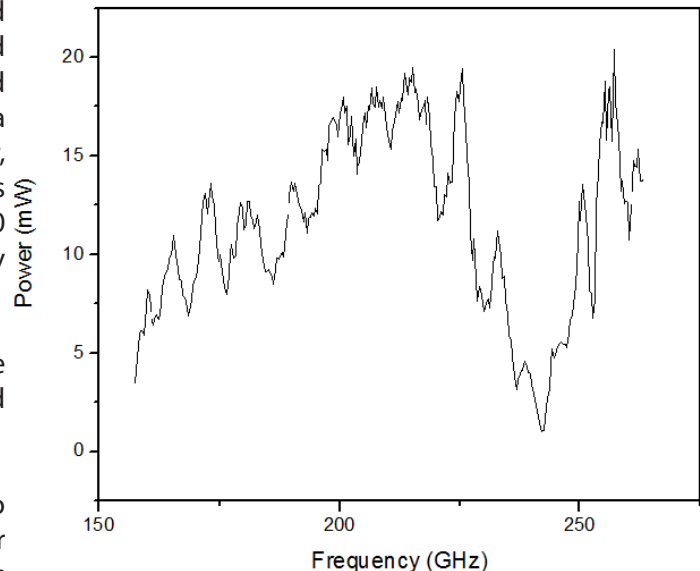
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### Product Details:

The QS1-260-2100 quasi-optical source is a hybrid device composed of a QS1-260 (OV-24) backward wave oscillator (BWO), waveguide adapter, and several Schottky diode multipliers, including a frequency doubler with paired secondary tripler, and a primary tripler with a secondary tripler. It is tunable across 160-260 GHz, 320-520 GHz, 480-780 GHz, 960-1560 GHz, and 1440-2340 GHz frequency ranges.

The unit is rapidly configurable for any of the above ranges. This makes it an excellent choice for a broad range of research and industrial applications.

The QS1-260 BWO can either be pre-packaged into MS-0.6 magnetic systems or used with any other MS-X.X system offered by Microtech Instruments Inc. Operation of QS1-260 also requires a high voltage power supply such as VR-6M and a water cooling system. In the baseline configuration, QS1-260 produces up to 20 mW of continuous wave tunable monochromatic power with a bandwidth of 3 MHz. A typical output power spectrum of QS1-260 is shown in the figure above on this page.

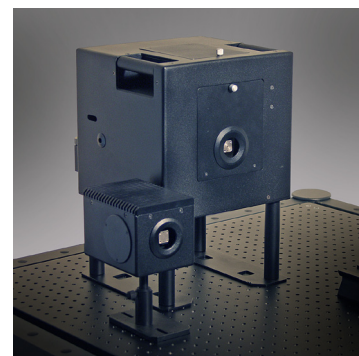


Operation of the QS1-260 BWO system requires the use of a VR6 high voltage power supply. This power supply provides a voltage of up to 6 kV with very low line ripple. The power supply also has the option of adding a small modulating voltage to broaden the spectral line in order to help prevent standing waves in the optical setup.

Use of the QS2 system is greatly enhanced through the use of Microtech's DAU control device. This data acquisition unit controls the power supply voltage, allowing the user to control the frequency output of the system. It also includes an interface for THz detectors, a large aperture chopper, and software which can be used to analyze frequency spectra to calculate dielectric constants of a material.



VR6-MU power supply for operating QS1 BWO's



Various magnet housings for QS1-260