QS1-370

Terahertz Generator

MICROTECH® instruments, inc.

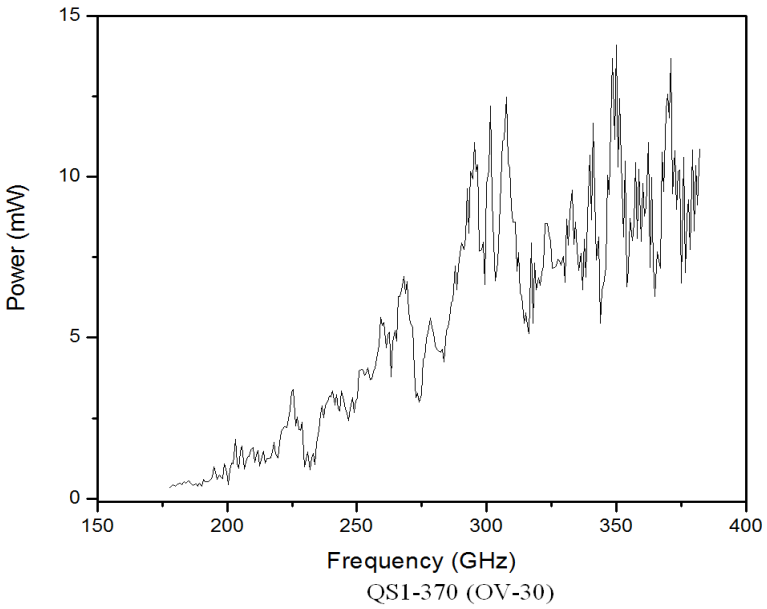
Product Description:

One of our mid range sources is the QS1-370 which has a maximum output frequency of 370 GHz. This system can be combined with multipliers to achieve a functional range above 1 THz. It can provide more power in the 300 GHz range than any of our other sources.

Key features include:

- **Spectral range: 220-370 GHz**
- **Spectral resolution: 3 - 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)
QS1-370	220-370	up to 10
QS1-260-750	220-750	up to 0.2
QS1-260-1150	480-1150	up to 0.3

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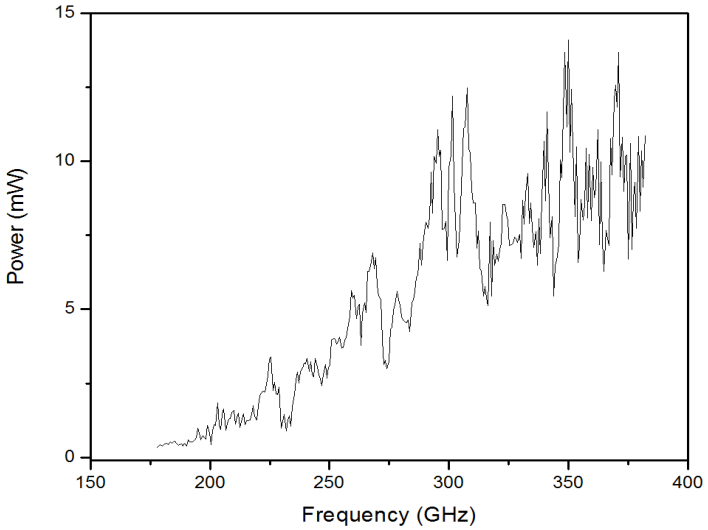
Product Details:

The QS1-370 quasi-optical source is a hybrid device composed of a QS1-370 (OV-24) backward wave oscillator (BWO). It is tunable across 220-370 GHz.



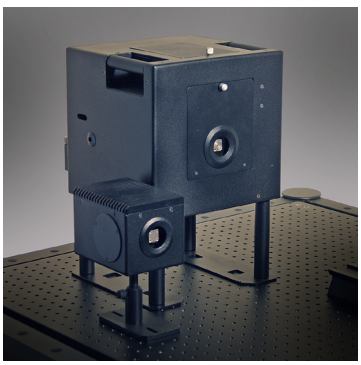
The unit is rapidly configurable for any of the above ranges. This makes it an excellent choice for a broad range of research and industrial applications.

The QS1-370 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 QS1-370 also requires a high voltage power supply such as VR-6M and a water cooling system. In the baseline configuration, QS1-370 produces up to 20 mW of continuous wave tunable monochromatic power with a bandwidth of 3 MHz. A typical output power spectrum of QS1-370 is shown in the figure above on this page.

Operation of the QS1-370 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 QS1 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 QS1-370

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