



# 263 GHz Klystron

## ● Top-Notch Enhancement at a Lower Cost

**Solid-state DNP with 263 GHz Klystron**  
The 263 GHz klystron is a continuous-wave (CW) microwave source with high power and frequency stability designed and manufactured for extended DNP NMR at 400 MHz  $^1\text{H}$  frequency and 100 K sample temperature.

The klystron provides a DNP option with lower purchase price, operating costs, footprint, and facility requirements versus the gyrotron product line while retaining high DNP sensitivity. At 5 W output power, it reaches 90-100% DNP efficiency on biological samples and small molecules in frozen solution while dense material samples perform at > 80% compared to the 263 GHz gyrotron.

The klystron is compatible with a 400 WB Ascend DNP solid-state NMR spectrometer and

Bruker low-temperature magic angle spinning (LT MAS) probes.

### Your Key Benefits:

- › DNP signal enhancements for applications at 400 MHz, ranging from materials to pharmaceutical science
- › Ideal for insensitive, natural isotopic abundance samples
- › Compact microwave source mounted just outside the NMR magnet 5 G line
- › Low maintenance and infrastructure requirements
- › Easy repositioning of klystron for probe exchanges and non-DNP NMR
- › Low-temperature MAS DNP probes to cover a wide range of applications

