

# VKP-8290A Klystron



CPI Microwave Power Products (MPP) offers super-power klystrons for particle accelerator applications. The VKP-8290A is a 805 MHz, 2.5 MW peak, 250 kW average long-pulse klystron for the Spallation Neutron Source Project at Los Alamos National Laboratory.

## Key Features

- Electron gun with modulating anode for beam control
- 6-cavity rf circuit, including one 2<sup>nd</sup> harmonic cavity for enhanced efficiency
- Single output window in WR-975 waveguide
- Collector capable of dissipating the entire beam power

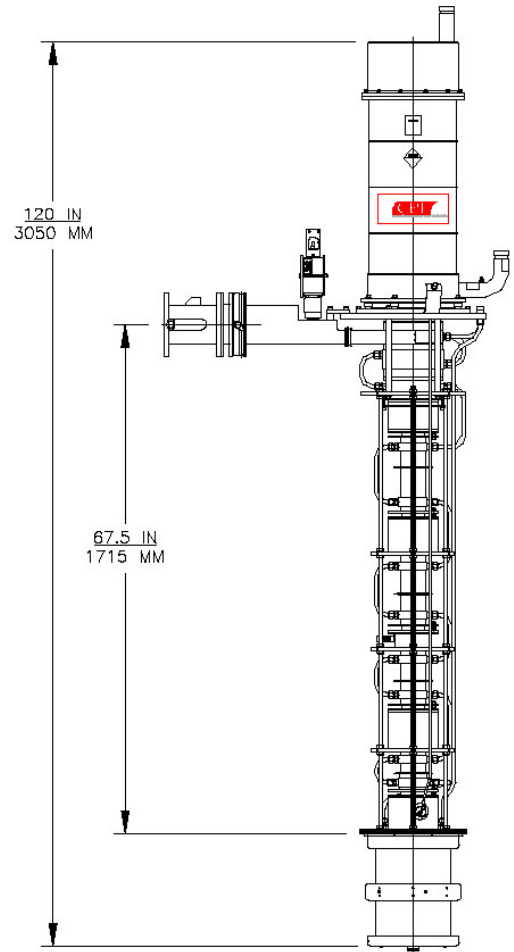
## Operating Parameters

|                      |       |              |
|----------------------|-------|--------------|
| Peak Power Output    | 2,500 | kWatts (min) |
| Average Output Power | 250   | kWatts       |
| Peak Beam Voltage    | 120   | kV (max)     |
| Peak Beam Current    | 55    | A (max)      |

|                          |           |                         |
|--------------------------|-----------|-------------------------|
| Peak Mod Anode Voltage   | 100       | kV                      |
| Frequency                | 805       | MHz                     |
| Duty                     | 10%       | ---                     |
| RF Pulse width           | 1.67      | msec                    |
| 1dB Bandwidth            | ± 0.7     | MHz (min)               |
| Saturated Gain           | 45        | dB (min)                |
| Efficiency               | 55        | % (min)                 |
| Collector Coolant Flow   | 120 / 450 | gpm / l/m               |
| Body Coolant Flow        | 10 / 2.3  | gpm / m <sup>3</sup> /h |
| O/P Window Cooling (Air) | 25 / 50   | cfm / m <sup>3</sup> /h |

|                   |     |   |
|-------------------|-----|---|
| Electromagnet:    |     |   |
| Gun Coil Current  | 18  | A |
| Gun Coil Voltage  | 20  | V |
| Main Coil Current | 30  | A |
| Main Coil Voltage | 120 | V |

|                        |               |             |
|------------------------|---------------|-------------|
| Size with Accessories: |               |             |
| Height                 | 120 / 3050    | inches / cm |
| Weight                 | 5,000 / 2,270 | Pounds / kg |



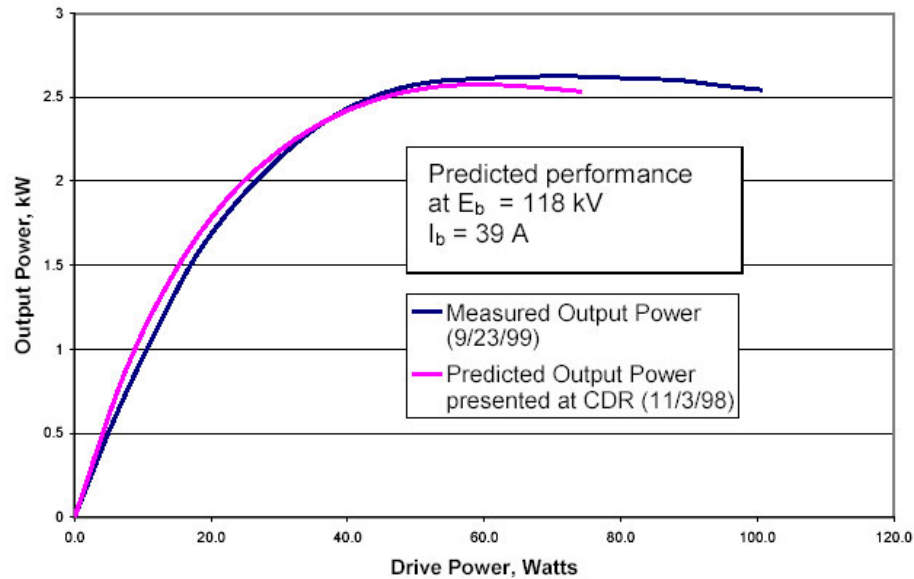
For information on Super Power Klystrons and other CPI MPP products, visit our website at [www.cpii.com/mpp](http://www.cpii.com/mpp), or contact:  
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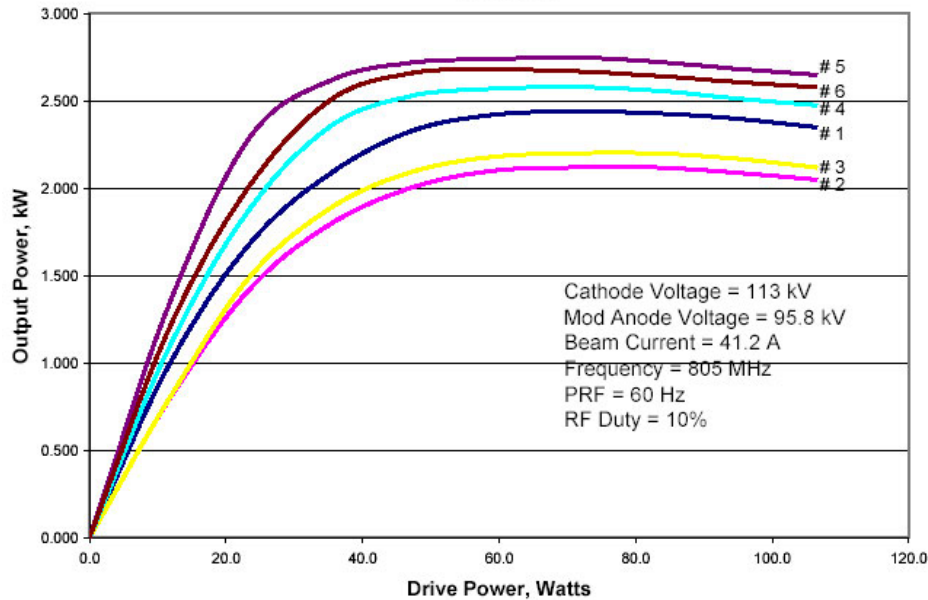
## Measured Test Data

Peak Beam Voltage: 113 kV  
 Peak Beam Current: 41.5 A  
 Peak Mod Anode Voltage: 96 kV  
 Frequency: 805 MHz

VKP-8290A - Transfer Curve



VKP-8290A - Transfer Curves with 1.5:1 Mismatch at 6 Equally Spaced Positions



For information on Super Power Klystrons and other CPI MPP products, visit our website at [www.cpii.com/mpp](http://www.cpii.com/mpp), or contact:  
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