



A Review of the Performance and Reliability of The CPI AutoWave

Presented at the 4th World Congress on Microwave and RF Heating,
Austin TX, November 8th 2004

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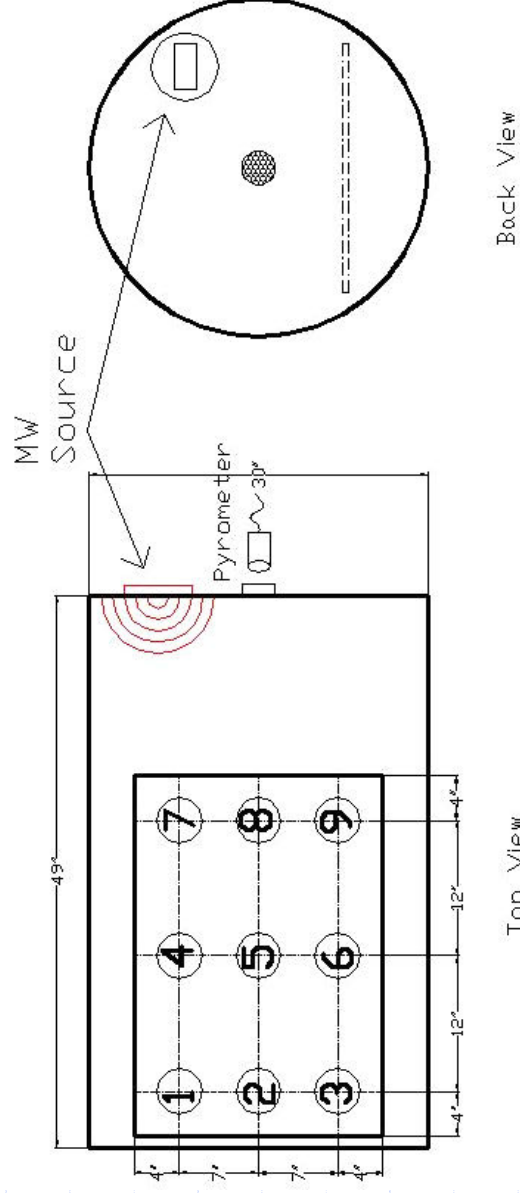
CPI AutoWave



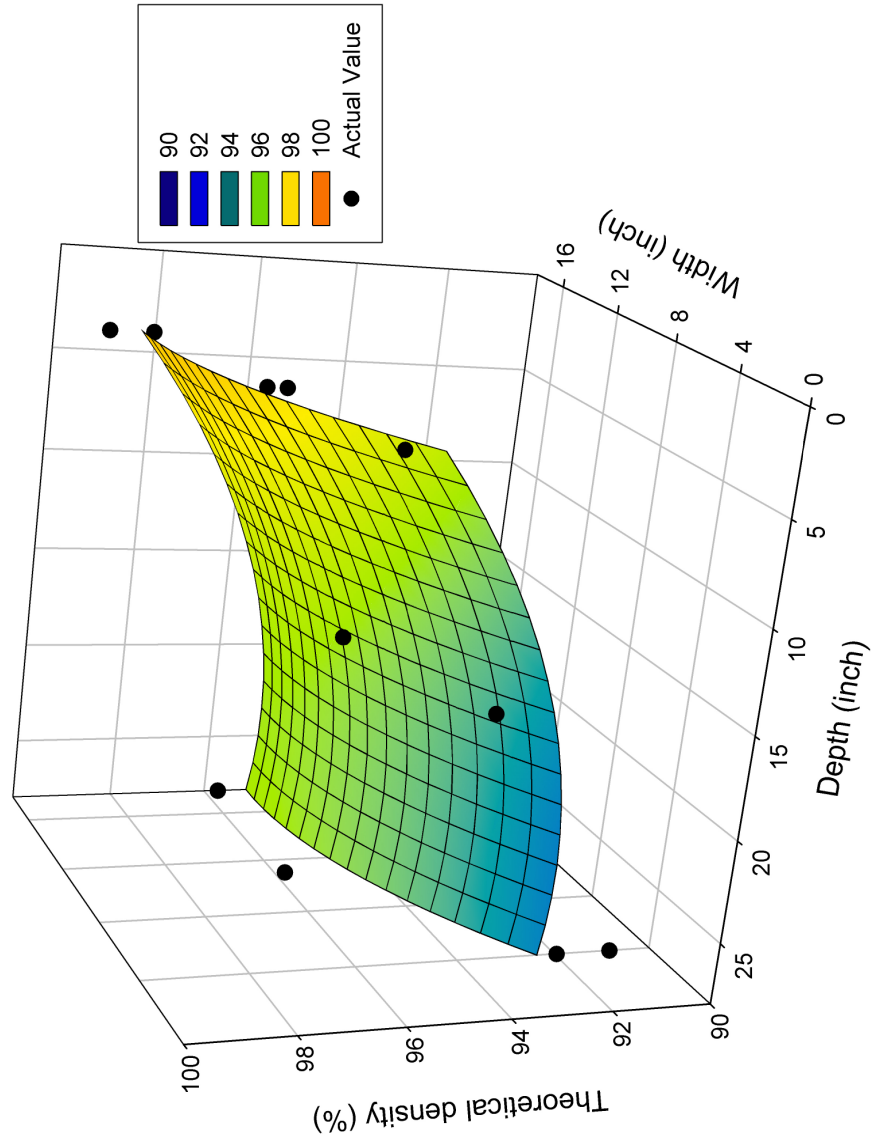
- 3 kW Power
- 2.45 GHz
- 2 Color Optical Pyrometer
- Vacuum and Atmosphere
- Forward and Applicator Power Readings

Uniformity of Heating in Applicator

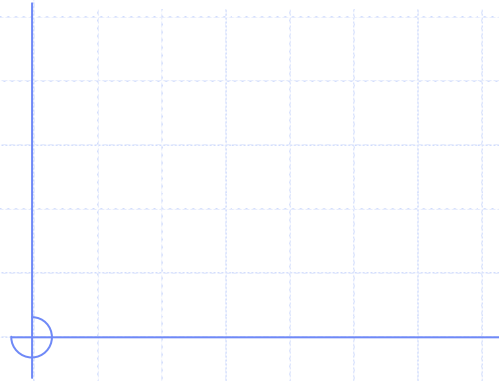
1	96.29 %	4	93.89 %	7	91.96 %
2	97.84 %	5	95.17 %	8	95.79%
3	98.85 %	6	94.46 %	9	95.71%



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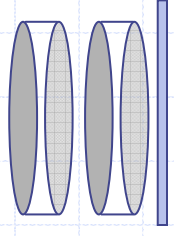


Reproducibility



Zirconia study

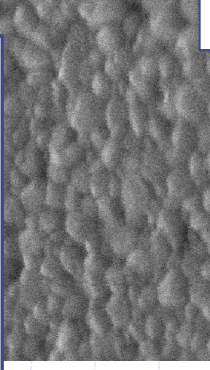
- Density (
- Hardness



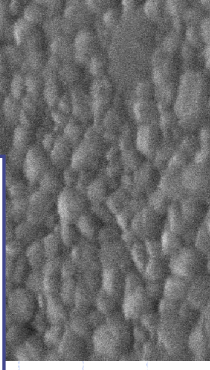
Reproducible
microstructures

Run 1

Top Position

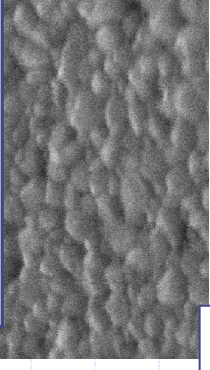


Bottom

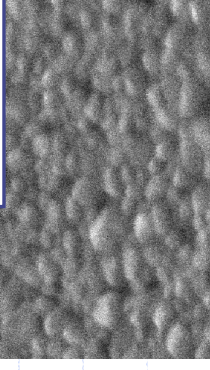


Run 2

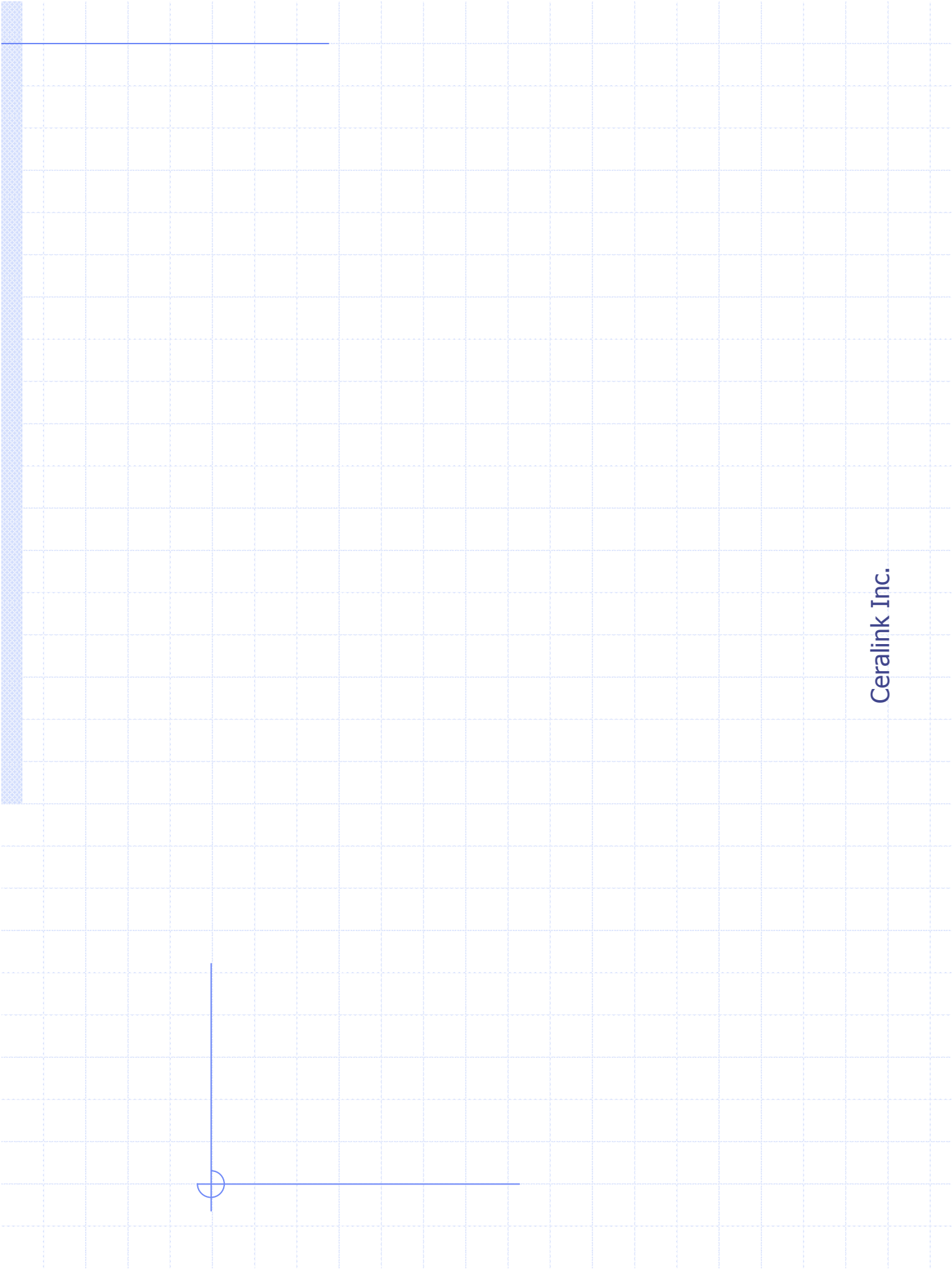
Top Position



Bottom



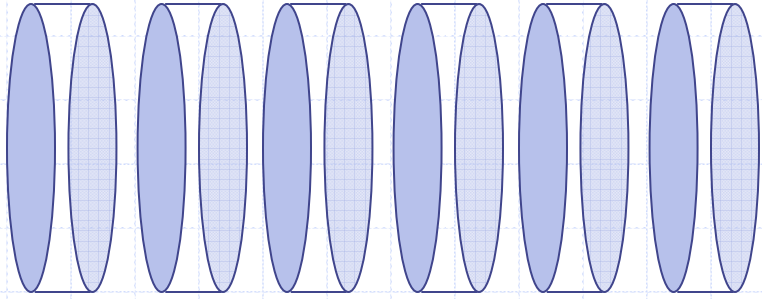
1 μ
m



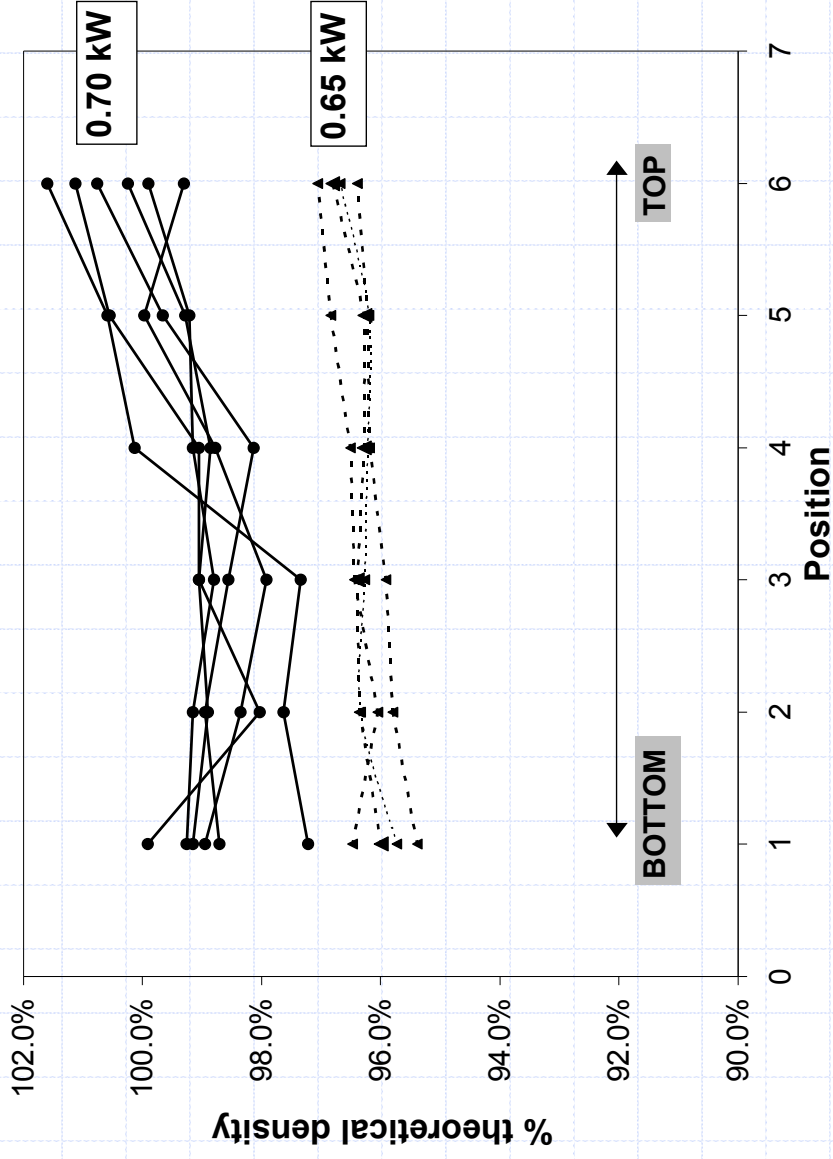
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Uniformity

Top of Stack

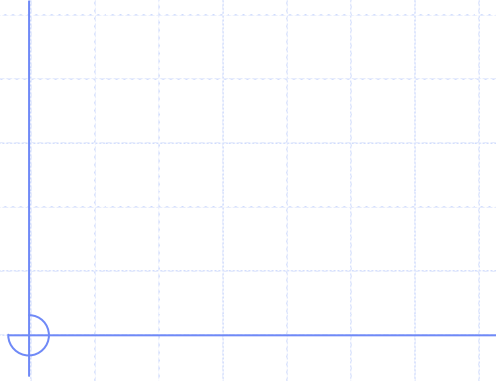


Bottom



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Stability of Magnetron Over Time



Energy and Power Requirements for Various Materials and Loads

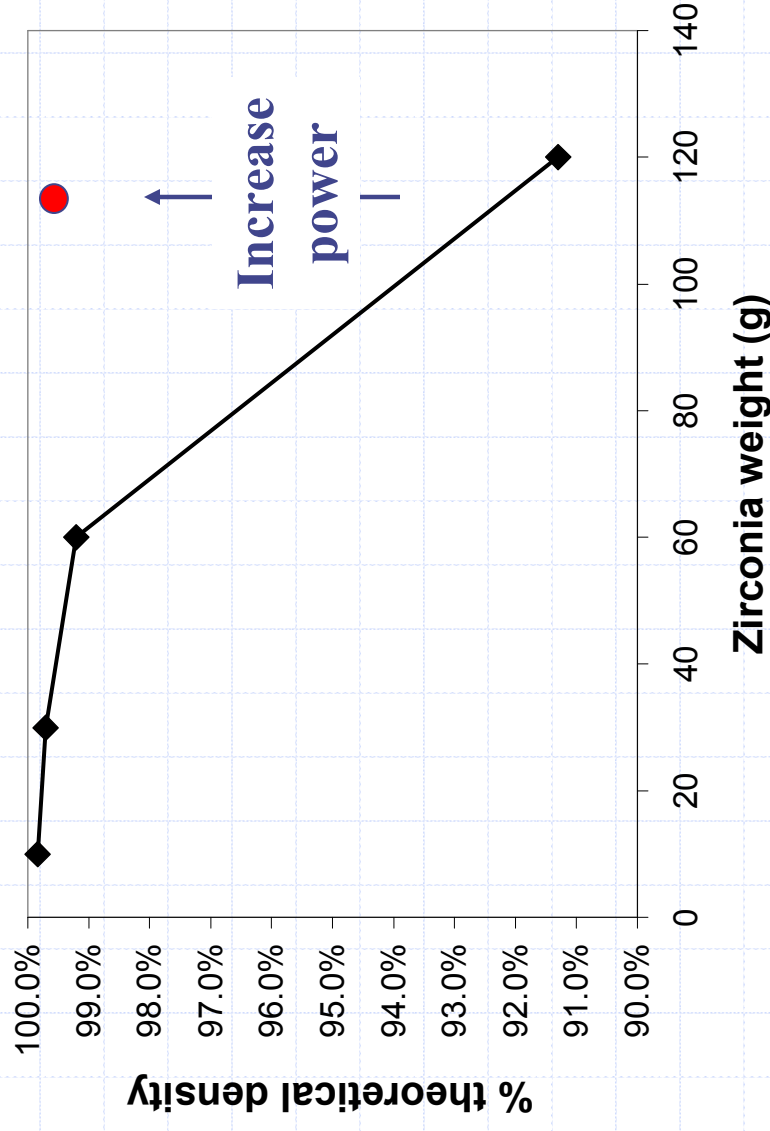
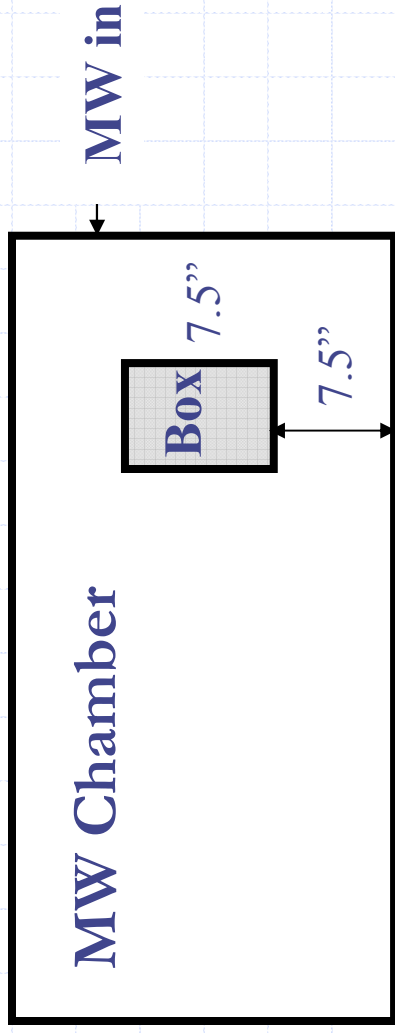
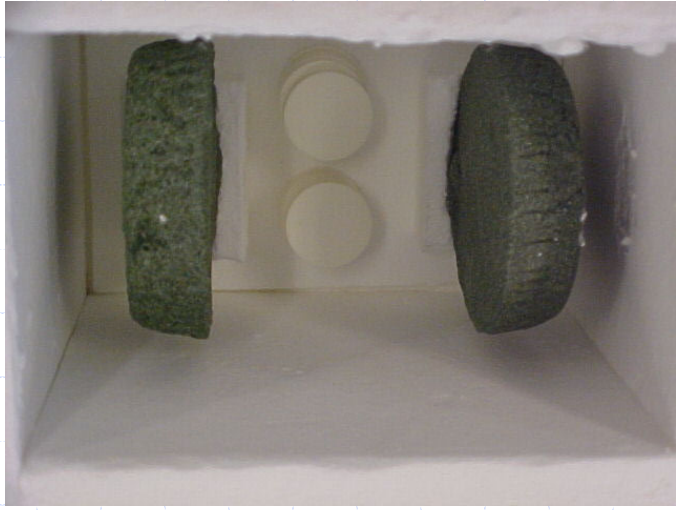
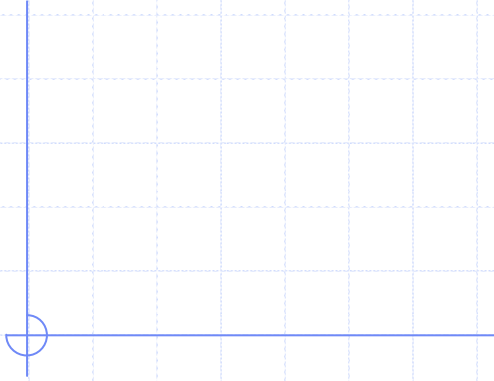


Figure 2. Density as a function of zirconia load

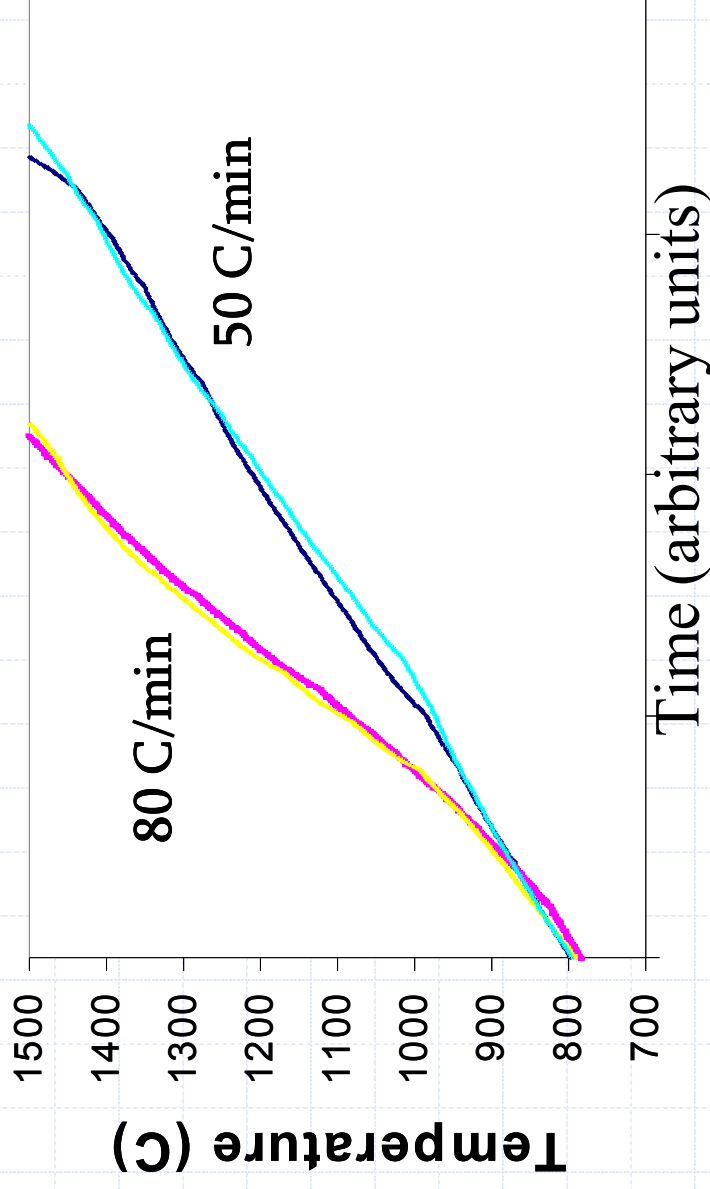
Development of Thermal Packaging



Heating Rates and Power Controls



Heating Rates



- Different Slopes Reflect Rate
- Reproducible Heating Rate for Different Loads

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