

WELCOME



Cavitation Probe

CP-2020™



CONTENT

- **Cavitation Theory**
- **CP-2020 Theory**
- **Data**
- **Features & Benefits**
- **Summary**

Cavitation Theory

- **Oscillating acoustic field creates Cavities in the cleaning fluid**
- **Stable oscillating cavities perform cleaning**
- **Transient cavities implode and perform cleaning**
- **Cavitation implosions can cause damage**
- **Cavitation uniformity and density is required to optimize PRE and reduce damage**
- **Cavitation is a function of; frequency, power, chemistry, dissolved gas, and temperature**

CP-2020 Theory

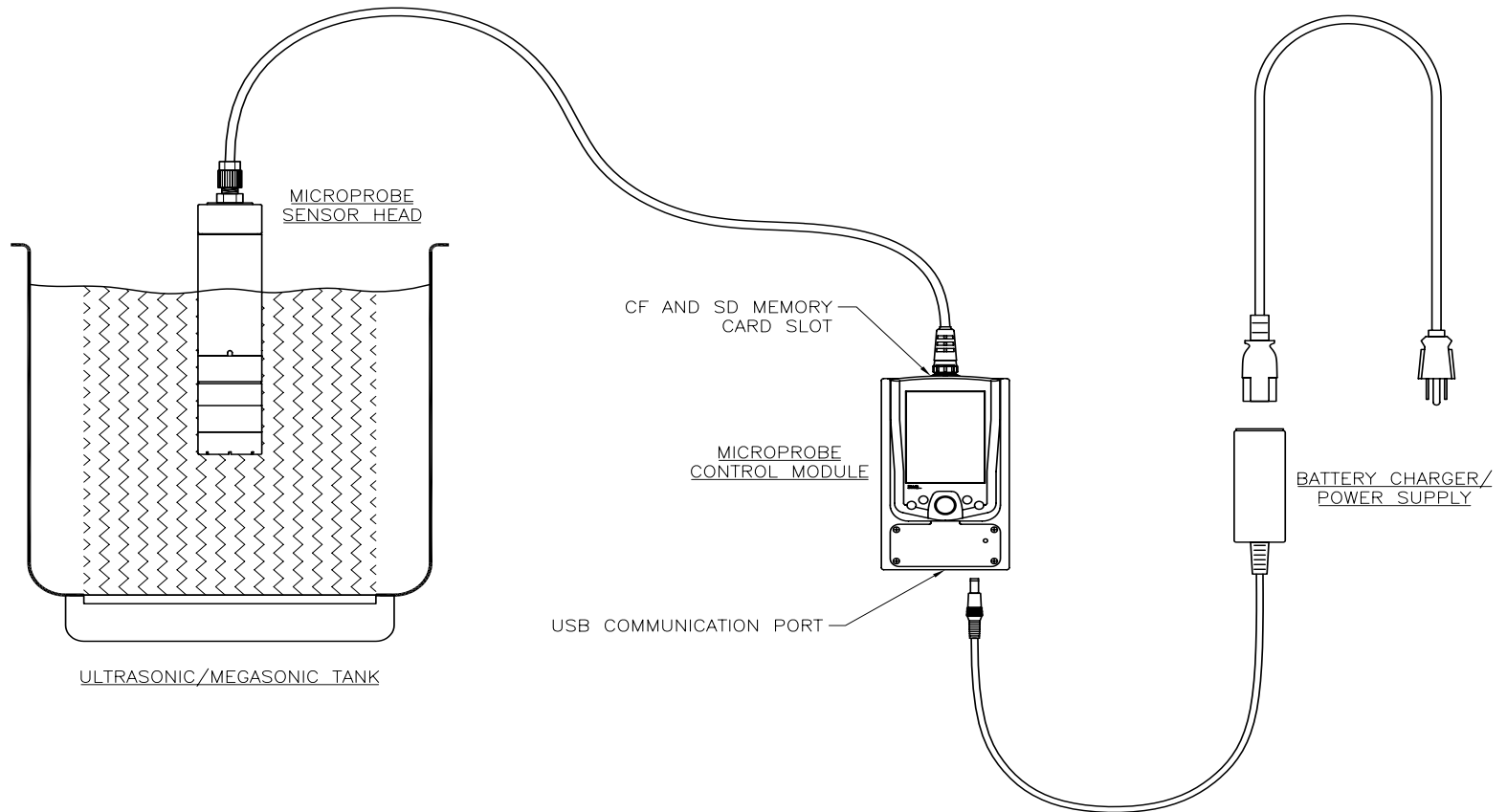
- **Cavitation Oscillations emit UV Light, called Sonoluminescence (SL)**
- **Cavitation Implosions emit lots of UV Light**
- **PMT's can detect very low levels of UV light**
- **The CP-2020 utilizes PMT technology**

CAVITATION PROBE

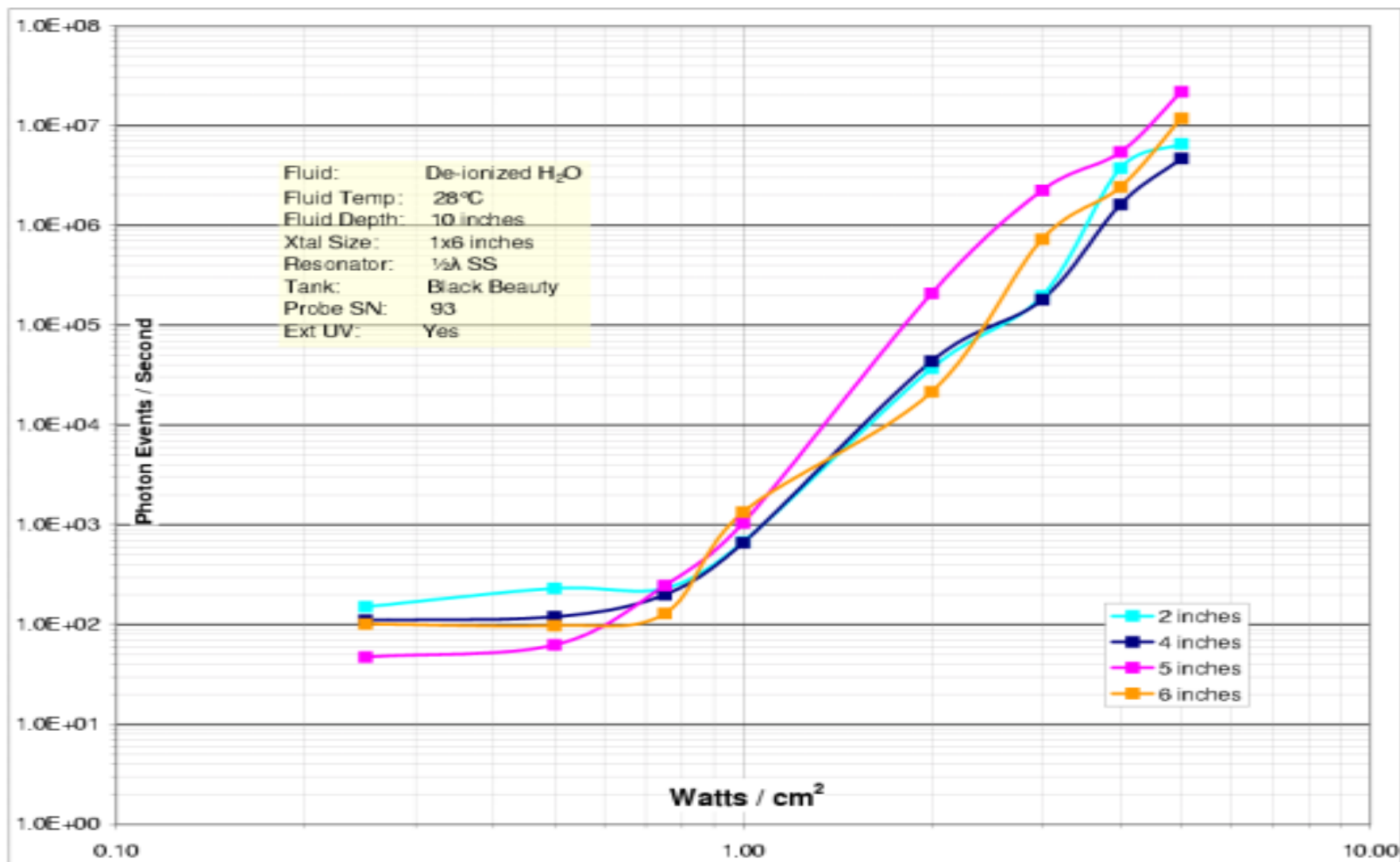
CP-2020



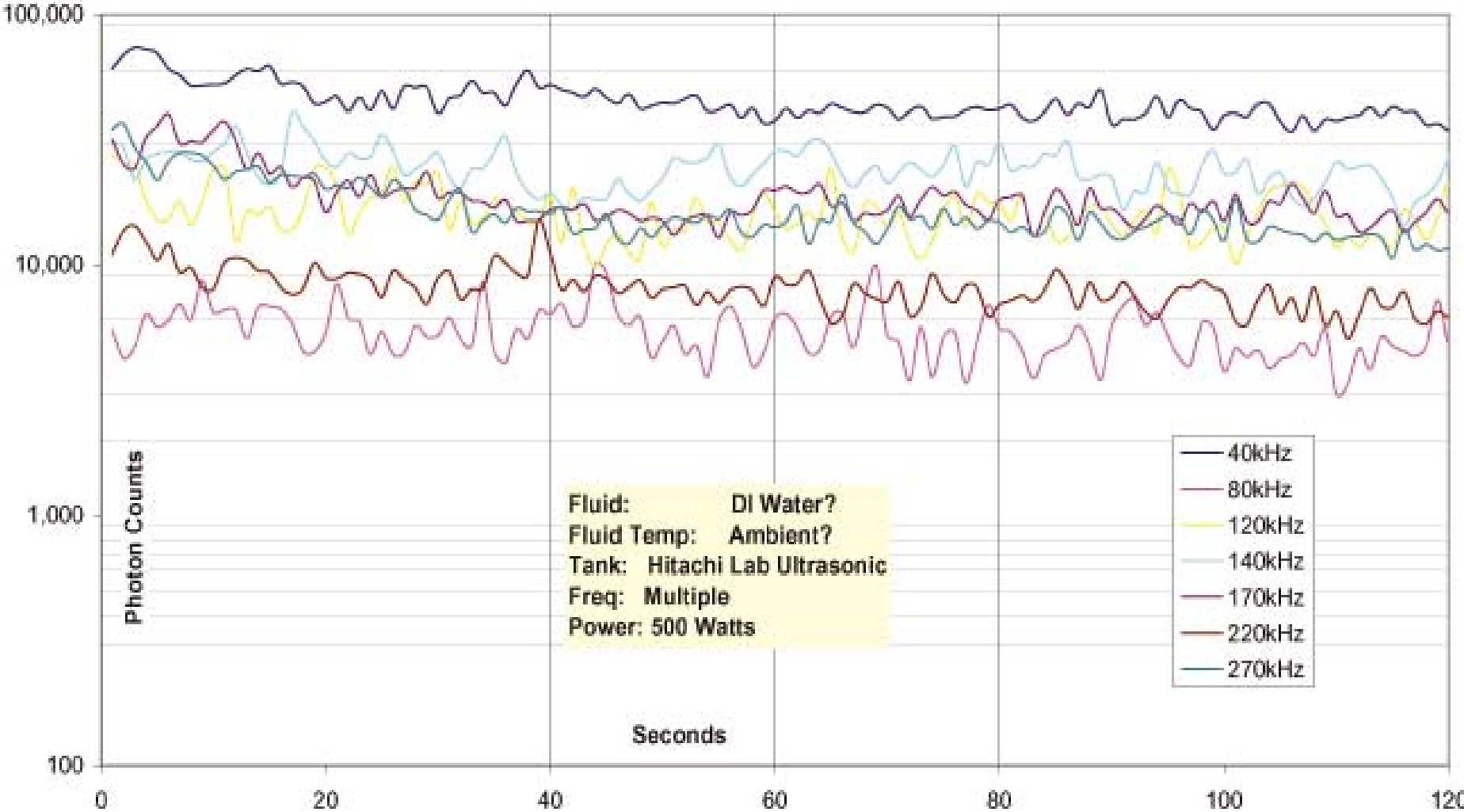
SYSTEM DIAGRAM



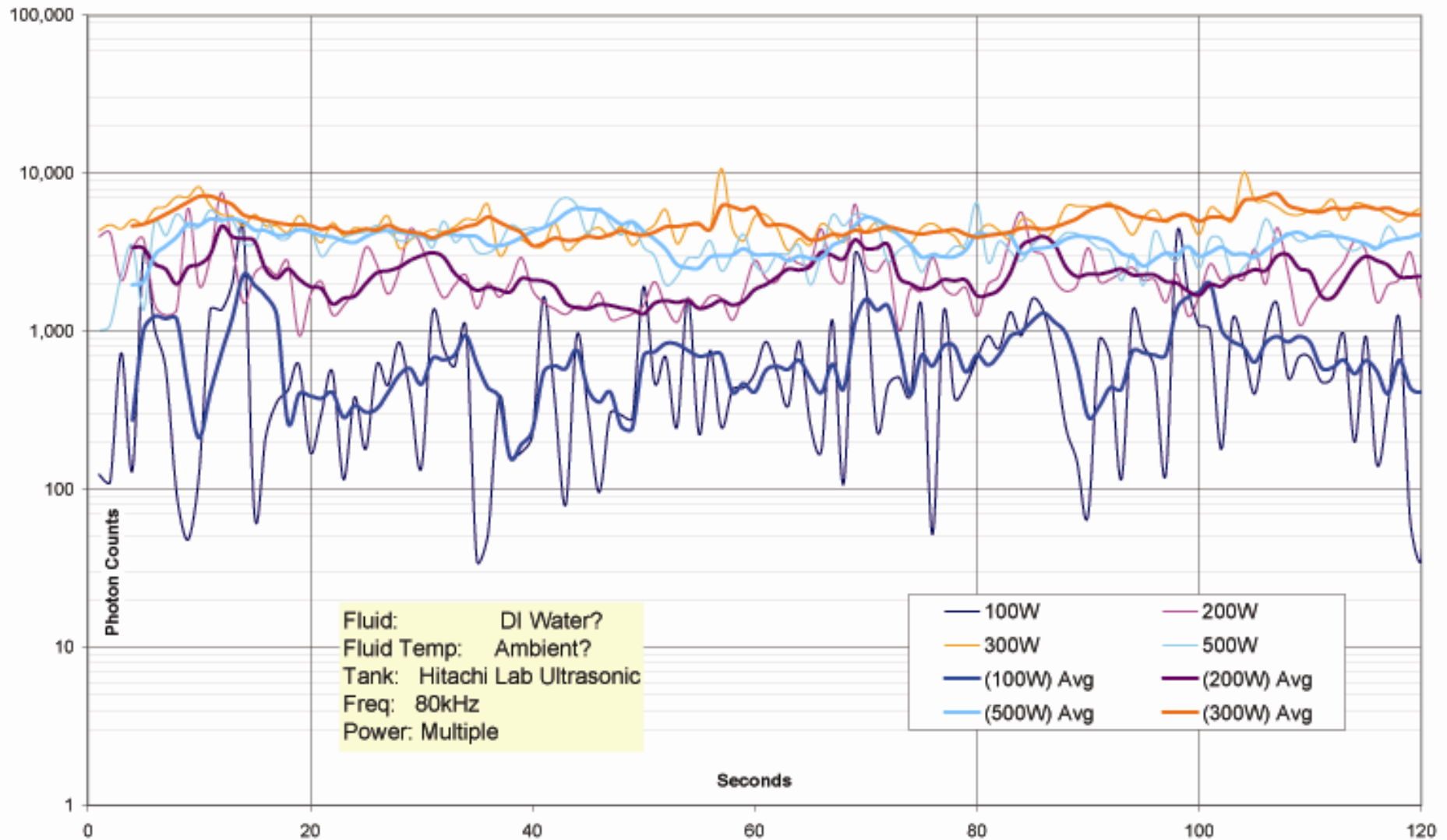
Cavitation vs. Intensity



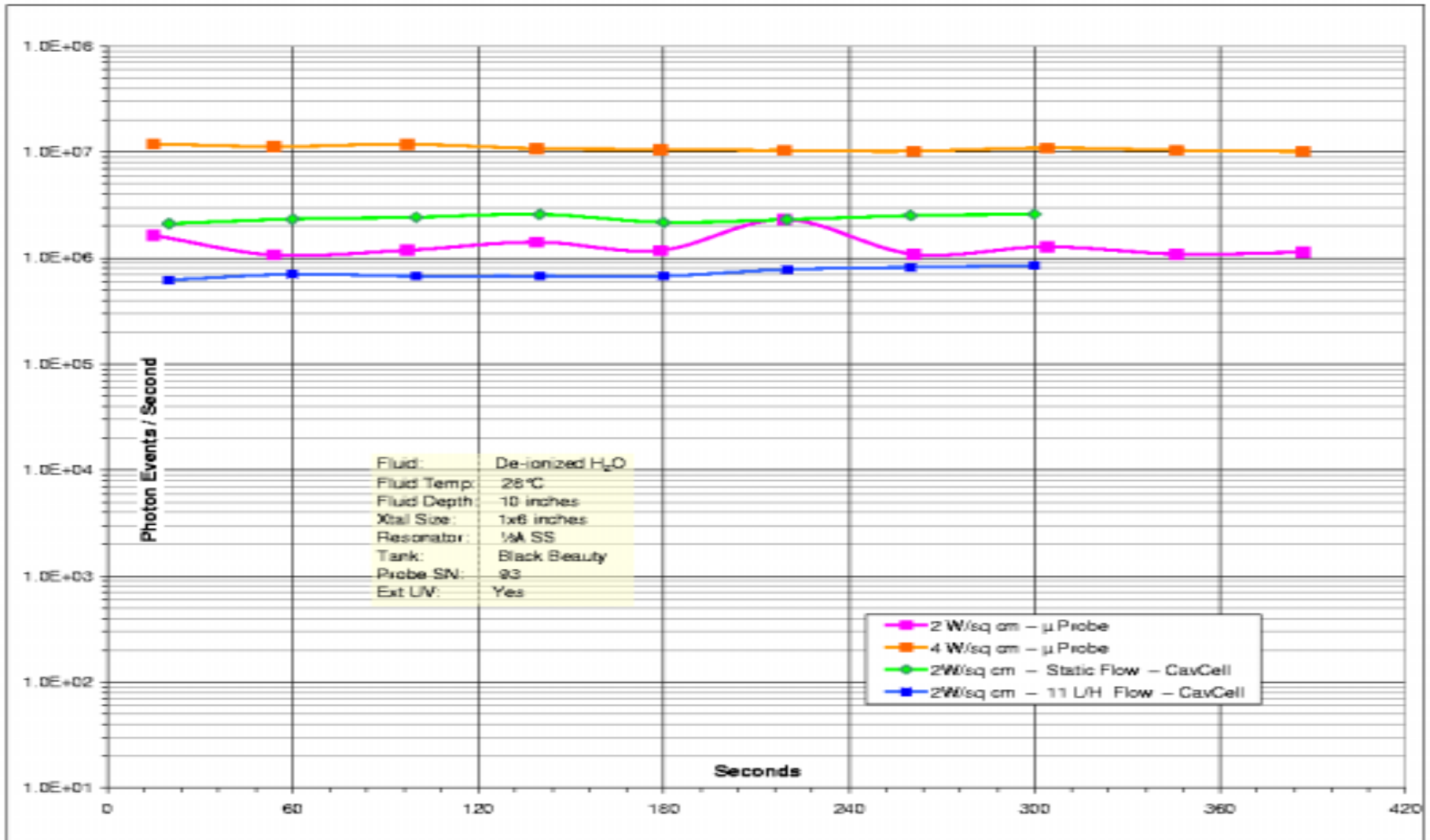
Cavitation vs. Frequency



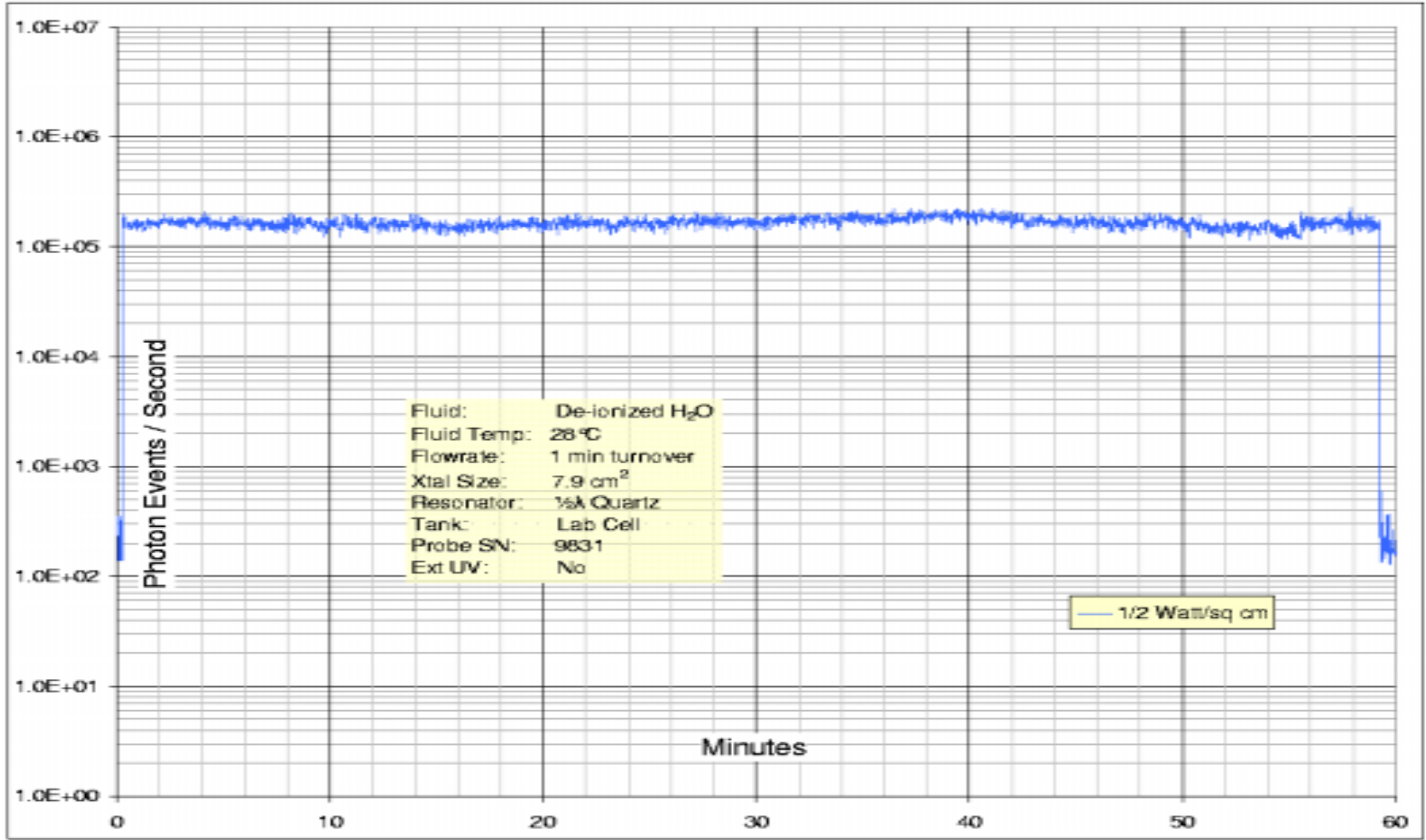
Cavitation vs. Power



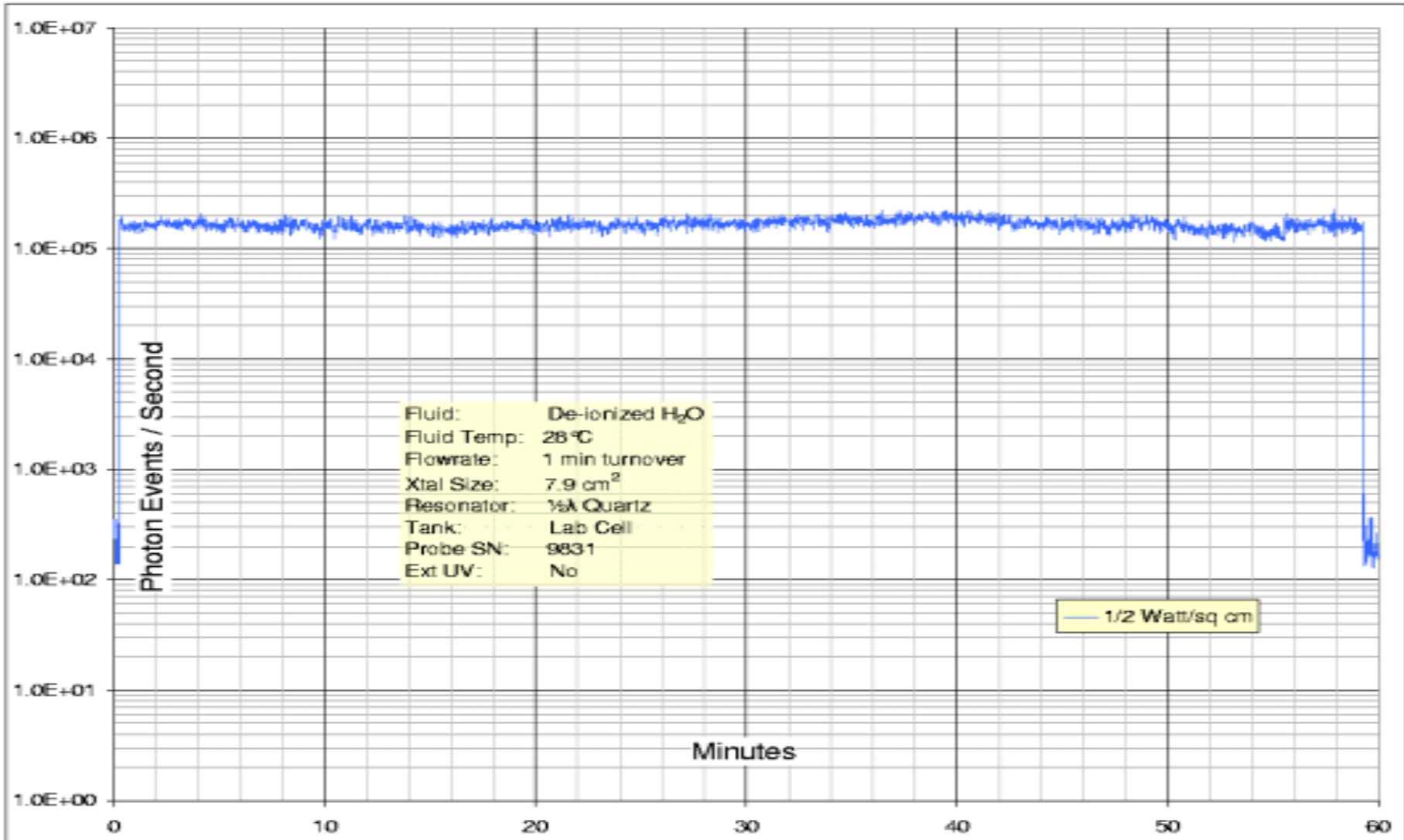
Cavitation vs. Product style



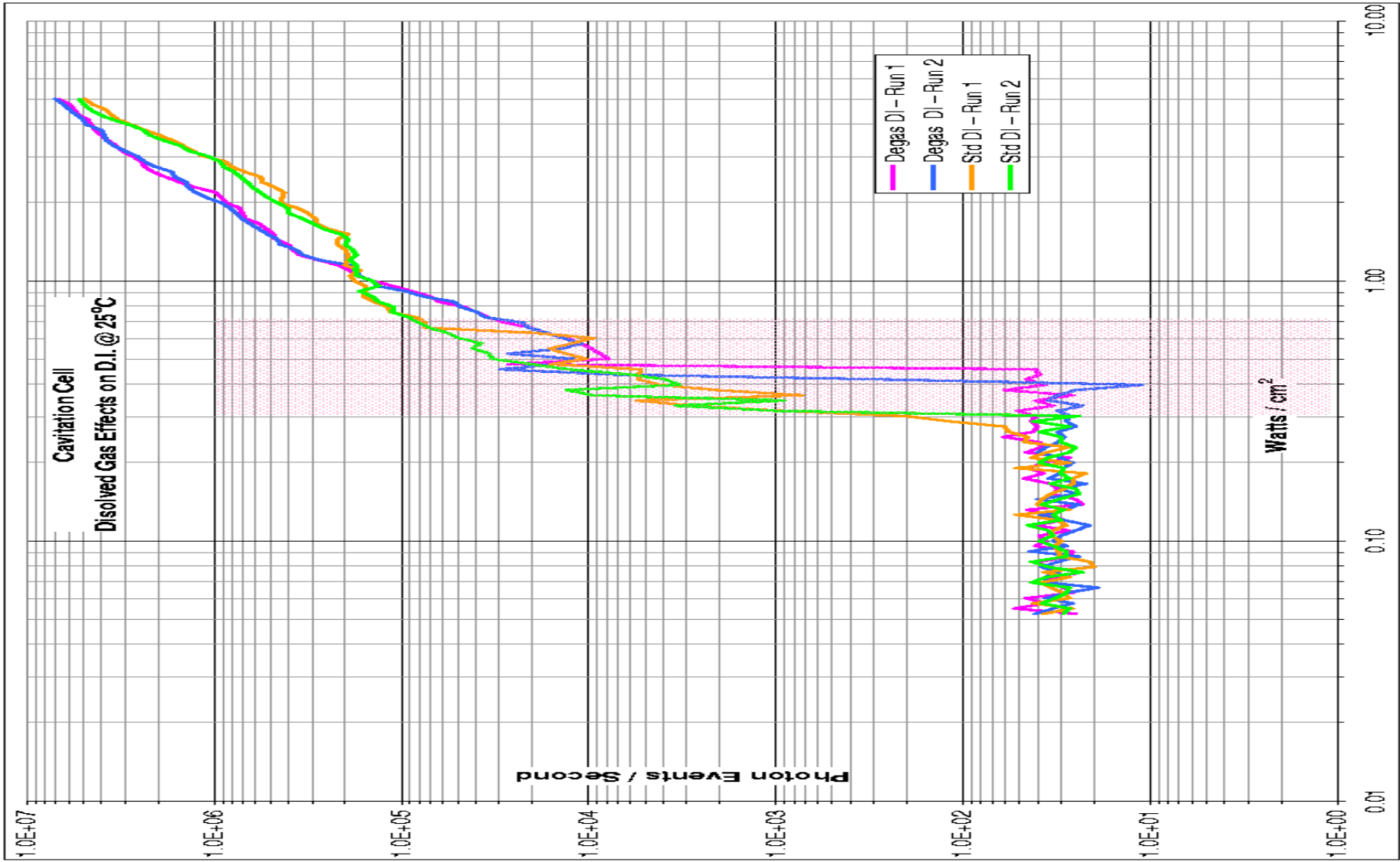
PMT Stability



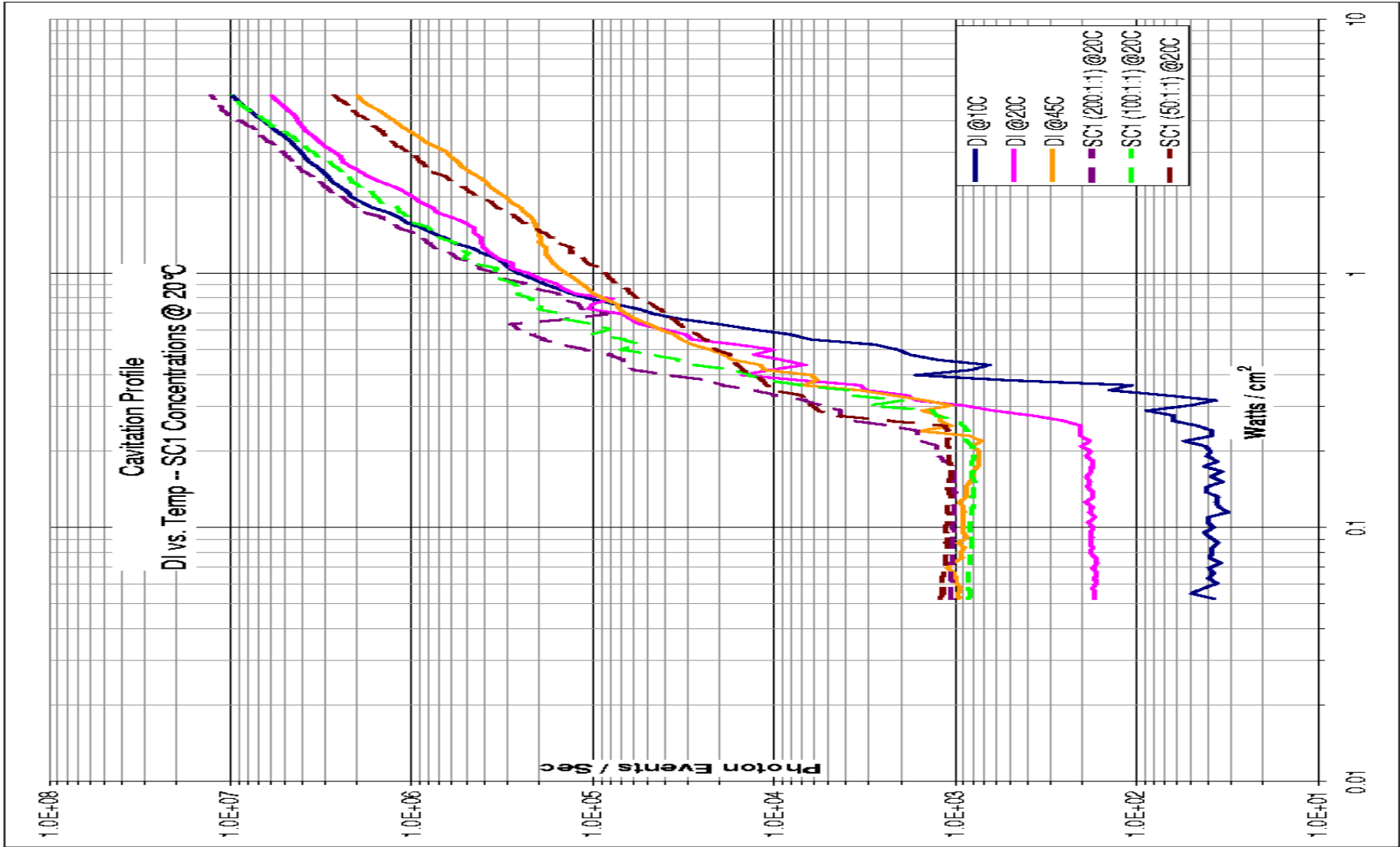
CP-2020 Can Detect Bad Transducers



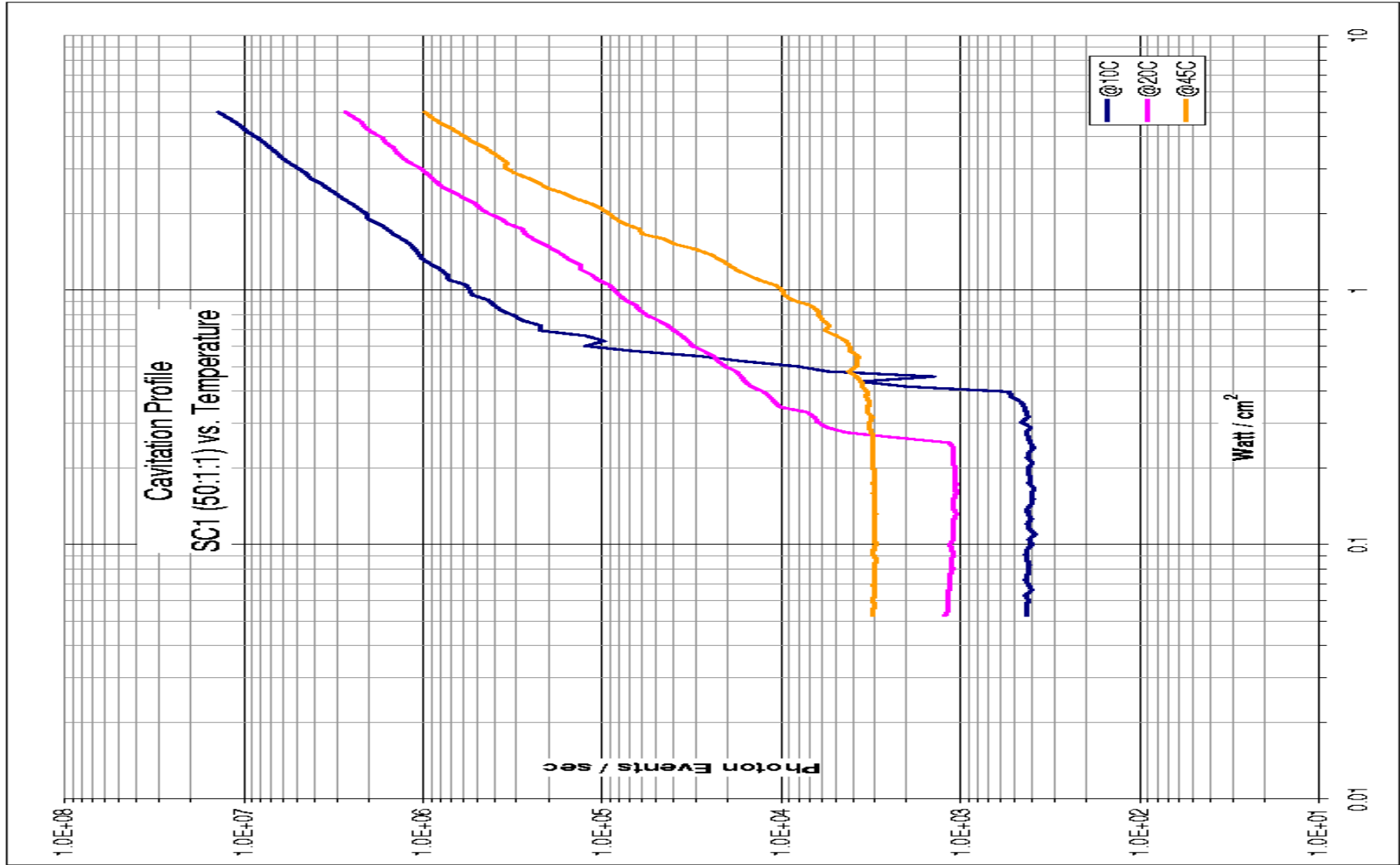
Cavitation vs. Dissolved Gas



Cavitation vs. Chemistry



Cavitation vs. Temperature



CP-2020 Features

- **Measures the direct result of Cavitation=SL**
- **SL is not frequency dependent**
- **Can sense low power distortions**
- **Can sense the effects of minor chemistry changes**
- **Can sense the effects of temperature**
- **Portable**
- **Clean room compatible**
- **USB, Bluetooth, or IR data download to a PC**
- **Compact Flash and Smartmedia Card Slots**

CP-2020 Benefits

- Measures the output of the Cavitation mechanism
- A Metrology tool that can quickly measure the change in a cleaning process parameter
- Can detect a poor performing process tank in minutes
- Can be used to perform real time QA on a process in seconds
- Easy to use
- Low Cost

Summary

- Cavitation is the cleaning and damage mechanism
- Cavitation is the result of many factors
- Cavitation results in SL=UV light
- UV detection is the surest way to quantify Cavitation and what effects the process
- The CP-2020 is a portable cost effective tool for Cavitation measurement

THANK YOU FOR YOUR ATTENTION

