



THE H.T. STORY

Since very many years CD spectrometers are able to record (or at least to measure it on a meter) the high voltage applied on the photomultiplier (H.T.). CD spectrometers operate normally with dynode feedback (see T.R. 11) and all users are aware that this voltage (always wavelength/bandpass dependant) is very important. Higher voltages mean higher noise! As units age (lamp, mirrors etc) you will find that voltages are increasing, at a certain point it's necessary to take corrective steps (lamp and/or mirrors replacement).

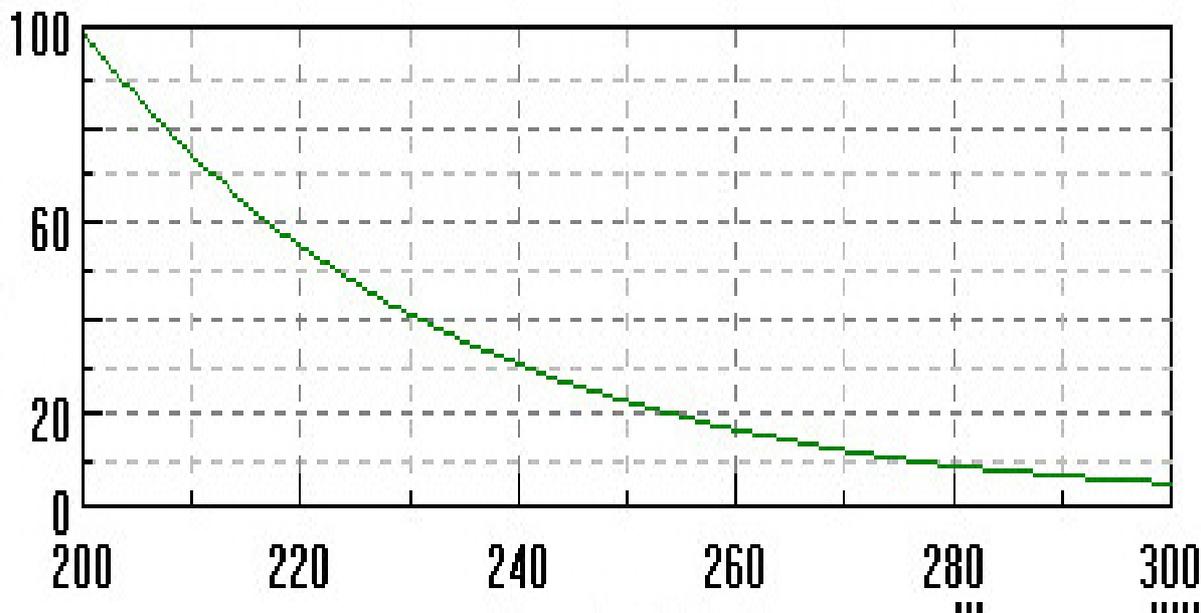
In modern Jasco CD there is the possibility to convert HT into absorbance scale, we used this facility to simulate the trend of H.T. versus "energy" expressed as arbitrary scale. For best reading a few tables have been prepared to evaluate relative efficiency, the H.T. is plotted in the horizontal scale.

How to use the graphs:

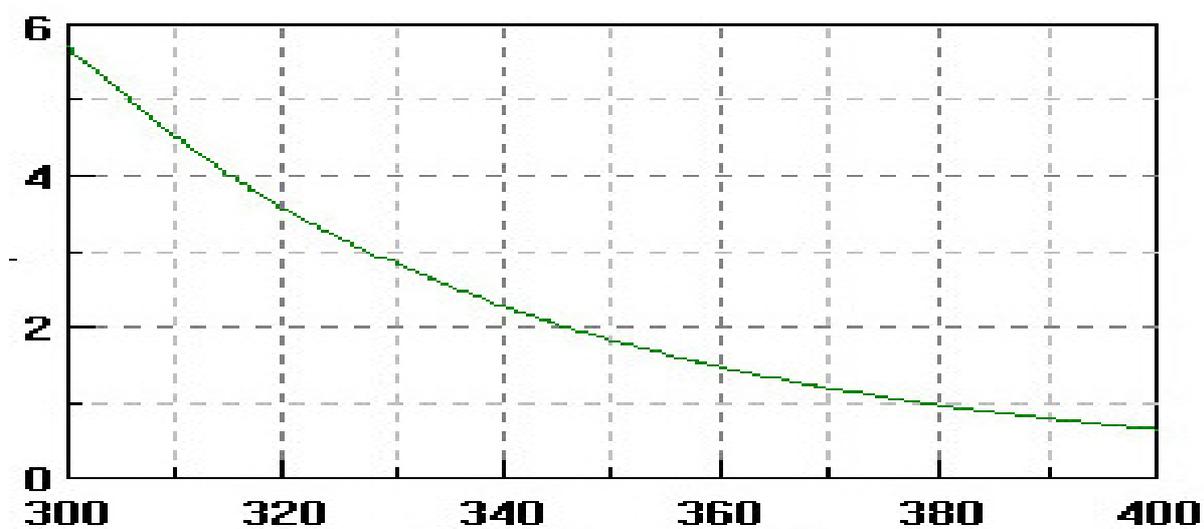
- 1- select the HT voltage your instrument was showing at a reference time (installation, change of lamp or of mirrors) at the wavelength of your interest. *For example 230V at 250nm with 1nm SBW and nothing in the beam.*
- 2- evaluate vertical axis intensity at this voltage using the pertinent figure. *About 41 in first picture.*
- 3- measure present HT in same condition as 1. *For example let's say we measure 290V.*
- 4- select the proper graph and evaluate the intensity. *In this case still first one, we can read about 8.*
- 5- calculate % ratio of value from 4 and from 2. *In this case $8/41 \times 100$, i.e. 19,5%* We can say here that our optics has (at the indicated wavelength) about 20% of original efficiency, i.e. 80% has been lost.
- 6- Repeat, if necessary, same calculation at other wavelengths

You'll get in this mode a more quantitative feeling on the current shape of your instrument.

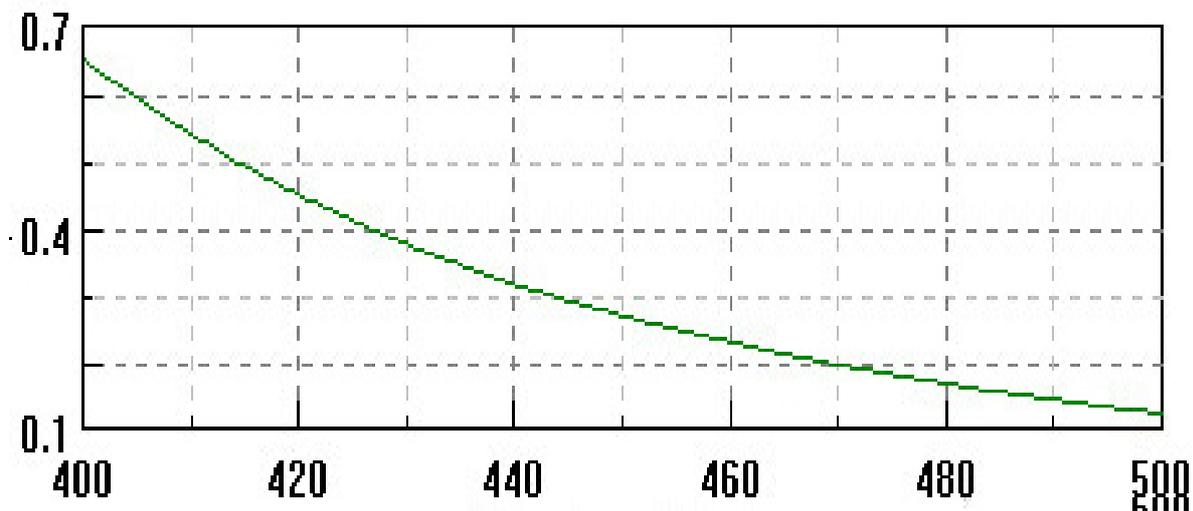
Range 200-300V



Range 300-400V



Range 400-500V



Range 500-600V

