

7. Modifications to the NIST photoelectric pyrometer

The radiance temperature calibrations described in this document are performed using the NIST PEP, which is a single wavelength instrument. The spectral radiance temperatures at 900 nm and 1000 nm are calculated from measurements made at 655.3 nm. Modifications to the PEP are underway to allow direct measurements at 900 nm and 1000 nm. The modified pyrometer also uses refractive optics, interference filters, and a photomultiplier tube. The modifications will include adding a filtered silicon detector and amplifier system, and a laser to simplify source alignments. A schematic of the modified PEP is shown in figure 24. The methods described in the report to realize the radiance temperature scale at 655.3 nm will be employed to realize the scale in the infrared.

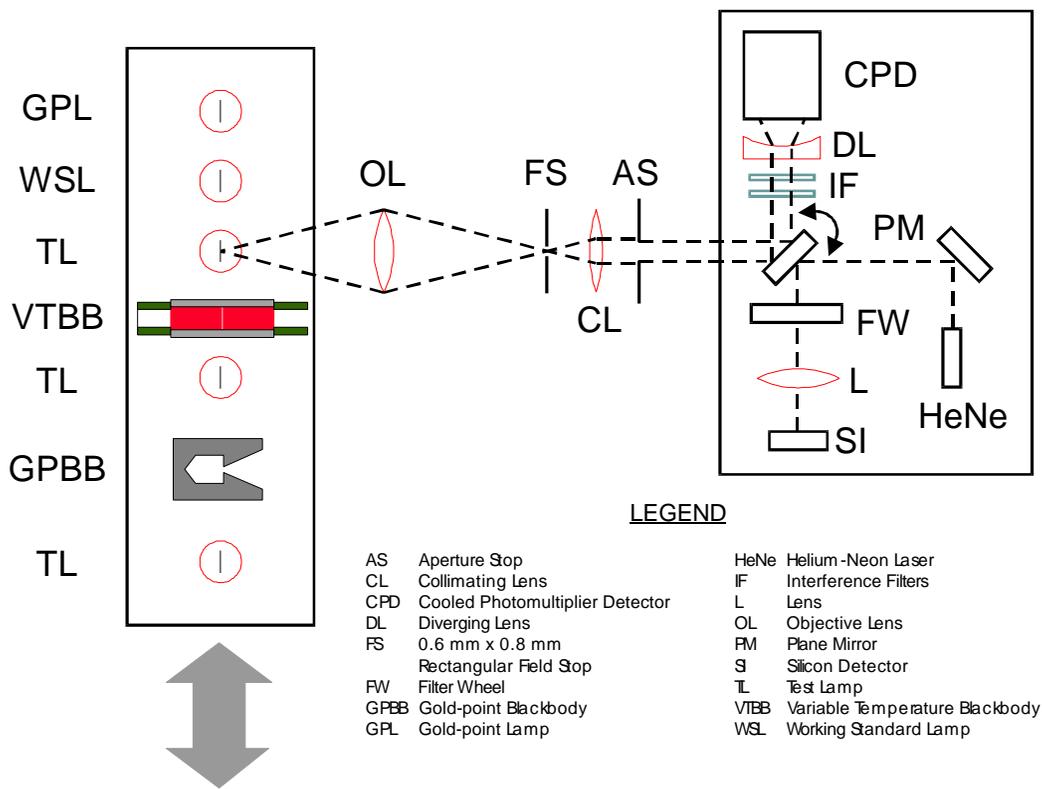


Figure 24. Modified NIST photoelectric pyrometer.