at right angles to each other. The calibration with this design tended to drift during operation, necessitating frequent recalibration, and also causing a systematic error in the data which could not be eliminated. The emitter might have been settling because of inadequate support of the emitter and due to increased vibration in the laboratory when the system was being pressurized. Therefore the pairs of pins were replaced by three pins at each end set in a delta configuration. When this was done, centering the emitter in the receiver was more easily accomplished and with greater accuracy. The drift in calibration was decreased by more than 50%, usually being on the order of only 0.2% per pressure cycle. The drift also changed direction, now being in a negative direction.

The major random error may be attributed to the determination of the thermopile potential. The minimum thermopile potential used was about 0.07 mv. The limit of error of the potentiometer in this range is $\pm$ (0.015% + 0.5 μ v); however, because the cell is calibrated with the same potentiometer, the absolute accuracy is unimportant, but the linearity and reproducibility of the potentiometer in the range used are the important specifications. Tests indicated that the linearity and reproducibility of the potentiometer in the range used (0.07 to 0.15 mv) was $\pm$ 0.2 μ v. This limit of error would correspond to a maximum random error of (0.0002/0.07) x 100% = 0.3%. The maximum deviation from