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Weinberger et al.

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[54] **REMOTE OPTICAL PATH FOR CAPILLARY ELECTROPHORESIS INSTRUMENT**

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[52] **U.S. Cl.** **250/227.11**; 356/320

[58] **Field of Search** ..... 250/327.2 C, 227.11, 250/227.28; 356/319, 320

[56] **References Cited**

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[57] **ABSTRACT**

An electrophoresis instrument includes a capillary tube mounted in an air cooled cartridge. The cartridge also supports a spherical lens which is part of the optical detection apparatus. The cartridge rests in a manifold which includes the sample and buffer reservoirs. The temperature of the capillary tube is controlled by measuring the electrical resistance of the capillary tube during the electrophoresis process and then cooling or heating the cartridge by circulating temperature controlled air over the tube. The optical path associated with the instrument is a fiber optic bundle bifurcated close to dual detectors into a reference arm and a sample arm so as to provide similar reference and sample optical paths. The instrument may be used for controlling temperature in gradient electrophoresis and detecting neutral markers in determining electro-osmotic flow.

5 Claims, 15 Drawing Sheets