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NASA TECH BRIEF



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Lamp Enables Measurement of Oxygen Concentration in Presence of Water Vapor

The problem:

To design an ultraviolet source lamp that will radiate sufficient energy at 1800 angstroms and 1470 angstroms for use in a double-beam, dual-wavelength oxygen sensor. This instrument determines the oxygen concentration in a gas mixture by measuring the absorption of ultraviolet radiation through the gas sampling cell at the two different wavelengths in order to eliminate the effects of ultraviolet absorption by water vapor. The source lamp was required to have the characteristics of small size, low input power, low-temperature operation, inherent ruggedness, and long life.

The solution:

An open-electrode lamp filled with xenon at a pressure of 100 mm of Hg. At this pressure, the lamp gives optimum output at 1800 angstroms and a sharp peak

at 1470 angstroms. This sharp peak is useful in aligning the slits of the optical system.

Note:

Inquiries concerning this development may be directed to:

Technology Utilization Officer
Manned Spacecraft Center
Houston, Texas 77058
Reference: B67-10387

Patent status:

Inquiries about obtaining rights for the commercial use of this invention may be made to NASA, Code GP, Washington, D.C. 20546.

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(MSC-10043)

Category 01