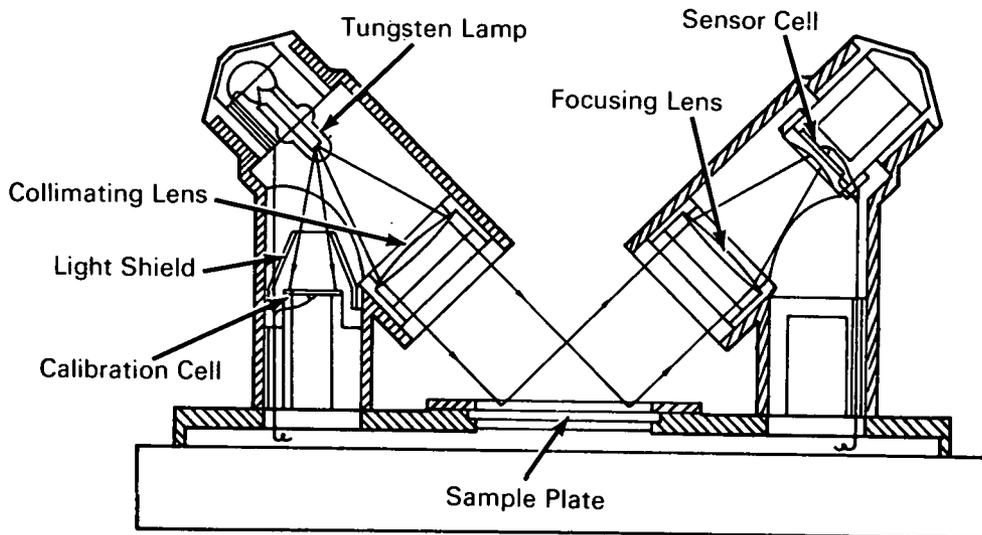


NASA TECH BRIEF



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Monitor Senses Amount of Contamination Deposited on Surfaces



A monitoring device has been developed that detects and indicates directly the amount of contamination deposited on a given surface. The monitor uses an optical system in conjunction with a reliable collimated light source and associated electronics.

In operation, light from the tungsten lamp is projected through a collimating lens onto the sample plate and the resultant reflected image passes through a second (focusing) lens that focuses the image to illuminate a restricted area (two millimeters in diameter) of a silicon sensor cell. The output signal from the sensor cell is proportional to the output signal from the light source. An additional silicon sensor cell is located in the tungsten lamp housing to continually sample the lamp output for the purpose of calibration. Any change in the monitor output signal is proportional to change in the optical absorption characteristics of the sample plate surface.

Sequence sampling of the monitor signal and the calibration signal is 4.8 seconds, consisting of 15

signal readouts and 15 calibration readouts every sequence. A flip-flop within the electronics provides continual sampling of either signal or calibration during operation.

Note:

Inquiries concerning this invention may be directed to:

Technology Utilization Officer
Goddard Space Flight Center
Greenbelt, Maryland 20771
Reference: B68-10089

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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Category 01