

mirrors 14 results in an extensive reflection of the infrared radiation IR into the center of the cylindrical mirror, while on the other hand, substantially all of the visible light L and the ultraviolet radiation UV is ultimately directed into the sample chamber 10. Therefore, the amount of infrared radiation IR in the rays reaching the sample chamber 10 is very low. The radial fins 16, which may be blackened copper sheets, exhibit a high absorption factor for the infrared radiation IR and rapidly conduct the heat produced thereby to the cooling tube 18. With this arrangement of the radial fins 16 and the cooling tube 18, the removal of the heat generated by the infrared radiation IR is sufficient to preclude any temperature problems in sample chamber 10.

It is apparent that with the above-described combination of the internal light sources 20 together with the selectively reflecting and permeable mirrors 12 and 14, the short wave length infrared radiation IR is largely eliminated in the sample chamber 10 without any significant attenuation of the ultraviolet radiation UV. At the same time, the problem of heat removal from the center of the cylindrical mirror 12 is effectively solved by the cooling tube 18 and its heat absorbing and conducting radial fins 16.

What is claimed is:

1. In an apparatus for exposing test samples to ultraviolet radiation and visible light from light sources that also produce unwanted infrared radiation, a selective filtering arrangement comprising:

- a. cylindrical means surrounding the light sources for passing ultraviolet radiation and visible light and blocking infrared radiation;

- b. means for passing infrared radiation and blocking ultraviolet radiation and visible light disposed within the cylindrical means and defining therein a central heat chamber;

- c. the light sources being disposed between the cylindrical means and the passing means;

- d. means for transferring heat from the infrared radiation out of the central chamber, and

- e. test sample exposing means exterior of the cylindrical means, whereby ultraviolet radiation and visible light is passed through the cylindrical means to the test sample exposing means while infrared radiation is passed through the passing means into the central chamber.

2. An apparatus as defined in claim 1 wherein:

- a. the cylindrical means is a cylindrical mirror that passes ultraviolet radiation and visible light and reflects infrared radiation, and

- b. the passing means are planar mirrors that pass infrared radiation and reflect ultraviolet radiation and visible light.

3. An apparatus as defined in claim 2 wherein the planar mirrors define a polygon whose vertices abut the inner surface of the cylindrical mirror.

4. An apparatus as defined in claim 3 wherein the heat transferring means comprises a fluid cooled tube having heat conducting radial fins extending to the vertices of the polygon.

5. An apparatus as defined in claim 3 wherein the test sample exposing means comprises a cylindrical chamber surrounding the cylindrical mirror.

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