selectively connected with a range-irradiation measurement circuit **28**. Further, a complete-dose measurement circuit **29** is securely connected to a terminal of the multiplexer **26** corresponding to the complete-ultraviolet-range receptor cell. During the testing, and depending upon the selected range, signals corresponding to measured values are present at the output of the instantaneous value circuit **27** and at the output of the range irradiation measurement circuit, as well as at the complete ultraviolet dose measurement circuit **29**. By means of corresponding keys and circuits, it is possible to make a value visible on the display **17** at any given time. Simultaneously, all outputs are connected to a memory **30** for long-term data storage as well as for preparation of data for an attachable printer. The output of the instantaneous value circuit **28** is also connected with a digital-/analog converter **31** to get an analog signal for recording.

The key **24** is provided for selective connection of the display **17** to the instantaneous value circuit **27** or the range irradiation measurement circuit **28**. The key **23** is provided for selective connection of the display **17** to the complete ultraviolet irradiation **29** and also the range irradiation measurement circuit **28**. The key **23** and the display key **24** is provided to connect the instantaneous circuit **27** to the display **17**. Further, by means of the operation of the selector control **20**, a selector unit **32** can be connected either with the range irradiation dose measurement circuit **28** or the complete ultraviolet dose measurement circuit **29** by means of the key switch **18'**. A relay-actuated circuit **34** is switched by a relay **33** whenever the selected irradiation corresponds to the measured irradiation. The fact that these connections are accessible from the outside allows the user to turn on and off desired devices, for example, by interrupting the current supply to the specific device.

By means of the apparatus described above, it is now possible to make precise and comparable measurements during the testing of samples, since the sensor is located in the plane of the samples while they are being driven. The advantages of the light and weather resistance testing apparatus of the present invention are that the irradiation in multiple different spectral ranges can be simultaneously measured during testing of the samples without shutting off the apparatus, that the samples and sensor are subjected to the same influences because the sensors are disposed in the plane of the samples, and that the black panel temperature is measured in the plane of the samples. A further advantage lies in the utilization of the heretofore wasted solar energy by means of the solar cells and the consequent saving of the energy previously provided by batteries.

The preferred frequency modulation devices are the model nos. AD 537 JM, Analog Devices Inc. and transmitter (**4**) and receiver (**5**) are special ones from the firm Eng. Oloff, Pfronten W. Germany.

The preferred multiplexers **25** and **35** and demultiplexers **26** are the model nos. MC 14051B from the firm Motorola Inc.

The preferred display unit **17** are the model nos. V1701-1 Varitronix Limited, Hong Kong.

The preferred selector unit **20** are the model nos. Typ DEP-031-B firm Izumi Inc., Japan.

A suitable analog-to-digital converter is model nos. AD 7525LN from the firm Analog Devices Inc.

A suitable memory is model no. MC 14510 B from the firm Motorola Inc.

We claim:

1. Apparatus for testing the resistance of samples of various materials to light and weathering, comprising

a sample testing chamber (**10**) defined by a housing wall (**8**),

lamps (**2**) disposed in said chamber and simulating the effect, on samples, of radiation, including sunlight, said samples being rotatably arranged in a plane in said chamber,

a sensor (**15**) disposed in the plane of, and rotatable with, said samples,

said sensor (**15**) having multiple receptor cells (**6**) producing a plurality of respective output signals,

each cell being responsive to a particular spectral range of radiation and generating signals corresponding to the irradiance (mW/sq.cm.) and irradiation (Ws/sq.cm.) incident upon it, and having a respective output;

means (**4**), rotatable with said sensor (**15**), transmitting the output signals from the sensor, serially, to a stationary radio receiver (**5**) external to said rotatable sensor, said means including a single multiplexer (**25**) and a single radio transmitter (**4**), said multiplexer (**25**) having an input connected to each receptor cell output and an output connected to said radio transmitter (**4**);

a plurality of solar cells (**7**) arranged on said sensor (**15**) and generating, from radiation received from said sunlight-simulating lamps (**2**), all electrical power necessary for operation of said receptor cells (**6**) and transmitting means (**4**);

said stationary radio receiver (**5**), including an antenna (**3**) projecting from said housing wall (**8**) into said chamber (**10**), receiving said signals and directing them to a de-multiplexer (**26**) for subsequent processing and display.

2. The light and weather resistance testing apparatus of claim **1**, wherein said antenna (**3**) is connected by means of a cable (**11**) to a socket (**12**) in the housing wall (**8**) for connection to a plotter unit (**13**).

3. The apparatus of claim **1**, wherein

said transmitter (**4**) is a frequency modulation transmitter with a carrier frequency, and modulates frequencies corresponding to said signals on its own carrier frequency.

4. Apparatus for testing the resistance of samples of various materials to light and weathering, comprising

a sample testing chamber (**10**) defined by a housing wall (**8**),

lamps (**2**) disposed in said chamber and simulating the effect, on samples, of radiation, including sunlight, said samples being rotatably arranged in a plane in said chamber,

a temperature measuring device (**6t**) and a sensor (**15**), both disposed in the plane of, and rotatable with, said samples,

said sensor (**15**) having multiple receptor cells (**6**), said receptor cells (**6**) and said temperature measuring device (**6t**) producing a plurality of respective output signals,

each cell being responsive to a particular spectral range of radiation and generating signals corresponding to the irradiance (mW/sq.cm.) and irradiation (Ws/sq.cm.) incident upon it, and having a respective output;

means, rotatable with said sensor (**15**), transmitting by radio the output signals from the sensor (**15**) and the temperature measuring device (**6t**), serially, to a stationary radio receiver (**5**) external to said rotat-