

CLAIMS

1. A skin analysis device for attachment to an electronic device of a user, the electronic device having at least one skin characteristic measurement device, the skin analysis device comprising:

- 5 an enclosure comprising an enclosure body, configured to be removably connected to the electronic device;
- one or more passive skin characteristic measurement assisters, connected to the enclosure and configured to assist one or more skin characteristic measurement devices to take a skin characteristic sample of a skin characteristic of the user;
- 10 a second skin characteristic measurement device, in which the second skin characteristic measurement device comprises a moisture sensor, connected to the enclosure and configured to take a second skin characteristic sample of a skin characteristic of the user; and
- a skin analysis device processor, in communication with the electronic device and the
- 15 second skin characteristic measurement device, the skin analysis device processor configured to:
- undertake a sensor focus distance calibration of the moisture sensor;
- determine a moisture factoring value that can be applied to the second skin characteristic sample;
- 20 obtain a second skin characteristic sample from the second skin characteristic measurement device;
- apply the moisture factoring value to the second skin characteristic sample; and
- provide the second skin characteristic sample to the electronic device..

2. A skin analysis device according to Claim 1 in which the at least one skin characteristic measurement device is a camera and the one or more passive skin characteristic measurement assisters comprise a lens, disposed in front of the camera when the enclosure is connected to the electronic device.

3. A skin analysis device according to Claim 1 in which the at least one skin characteristic measurement device is a camera and the one or more passive skin characteristic measurement

assisters comprise a color calibrator assembly, disposed in front of the camera when the enclosure is connected to the electronic device.

4. A skin analysis device according to Claim 3 in which the color calibrator assembly comprises:

5 a sleeve, through which the camera takes a picture, a color calibrator disposed on an inside surface of the sleeve, and a skin contact ring.

5. A skin analysis device according to Claim 1 in which the at least one skin characteristic measurement device is a camera and the one or more passive skin characteristic measurement assisters comprise a light source assembly, in which the light source assembly comprises:

10 a light source board with one or more individually controllable light sources thereon that illuminate the user when the camera captures an image of the user;

a diffuser that diffuses one or more light sources that pass through the diffuser, the light source board comprising one or more light source apertures located therein that allow light sources to pass therethrough undiffused;

15 a set of first light sources providing a first light source, disposed on the light source board such that the first light source does not pass through the light source apertures and is diffused by the diffuser.

6. A skin analysis device according to Claim 5 in which the light source assembly further comprises a set of second light sources providing a second light source, disposed on the light
20 source board such that the second light source passes through the light source apertures undiffused.

7. A skin analysis device according to Claim 6 in which the set of first light sources are light emitting diode lights providing light emitting diode light and the set of second light sources are ultraviolet lights providing ultraviolet light.

25 8. A skin analysis device according to Claim 1 further comprising:

one or more active skin characteristic measurement assisters, connected to the enclosure and configured to assist the one or more skin characteristic measurement devices take a skin characteristic sample of a skin characteristic of the user; and

a skin analysis device processor, in communication with the electronic device and the one or more active skin characteristic measurement assisters, the skin analysis device processor configured to:

receive a sample taking signal from the electronic device; and

5 control the one or more active skin characteristic measurement assisters to assist the one or more skin characteristic measurement devices take a skin characteristic sample.

9. A skin analysis device according to Claim 8 in which the one or more active skin characteristic measurement assisters comprise a light source assembly.

10 10. A skin analysis device according to Claim 6 in which the light source assembly further comprises a first light source and a second light source, in which the first light source is a light emitting diode (LED) light source and the second light source is an ultraviolet (UV) light source.

15 11. A skin analysis device according to Claim 7 further comprising a diffuser, configured to be between the light source board and the user, and configured to diffuse the first light source and not diffuse the second light source.

12. A skin analysis device according to Claim 8 in which the skin analysis device processor further comprises a Bluetooth transceiver and the sample taking signal is received from a Bluetooth transceiver of the electronic device.

20 13. A skin analysis device according to Claim 1 in which the skin analysis device processor is further configured to:

receive a sample taking signal from the electronic device; and

control the second skin characteristic measurement device to take the second skin characteristic sample.

25 14. A skin analysis device according to Claim 1 in which the skin analysis device processor further comprises a Bluetooth transceiver and the sample taking signal is received from a Bluetooth transceiver of the electronic device.

15. A skin analysis device according to Claim 1 in which the enclosure further comprises a cylindrical sleeve assembly aperture configured to be disposed in front of a camera of the electronic device when the skin analysis device is attached to the electronic device

5 16. A skin analysis device according to Claim 15 in which the cylindrical sleeve assembly aperture is further configured to receive a skin characteristic measurement assister.

17. A skin analysis device according to Claim 1 further comprising an app, installed and operating on the electronic device, configured to:

communicate with the skin analysis device and the electronic device to facilitate obtaining the skin characteristic sample from the at least one skin characteristic measurement device.

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