CLAIMS

1. A thermal imaging device comprising:

an LED flash array having a first opening in a substantially cylindrical component of said LED flash array and a second opening in a substantially cup shaped component of said LED flash array, wherein said second opening has a larger circumference than said first opening;

a sensor capable of detecting IR radiation; and

a controller coupled to said LED flash array and said sensor, said controller capable of causing said LED flash array to emit a pulse of radiation, such that said sensor detects IR radiation radiated off an object in front of said thermal imaging device.

2. The thermal imaging device of claim 1, wherein said LED flash array comprises a housing body having a plurality of LED sockets, and an LED installed in each of said LED sockets.

3. The thermal imaging device of claim 2, wherein each of said LED's is an Infra-Red (IR) LED.

4. The thermal imaging device of claim 3, wherein each of said IR LED's emits IR radiation and radiation across the remainder of the electromagnetic spectrum when a current is applied, and wherein said IR radiation is a high intensity relative to said radiation across the remainder of the electromagnetic spectrum.

5. The thermal imaging device of claim 4, wherein said IR radiation consists essentially of wavelengths in the inclusive range of 770 nm to 1 mm.

6. The thermal imaging device of claim 2, wherein said LED flash array housing has a substantially circular cross section.

7. The thermal imaging device of claim 6, wherein each of said LED sockets is arranged such that each installed LED shares at least one focal point.

8. The LED flash array of claim 1, wherein said substantially cylindrical component is tube shaped.

9. A method for creating a thermal image comprising;

generating an infra-red (IR) pulse using an array of LEDs controlled by a controller wherein said array of LEDs has a first opening in a substantially cylindrical component of said LED flash array and a second opening in a substantially cup shaped component of said LED flash array, wherein said second opening has a larger circumference than said first opening;

sensing emitted IR radiation using a sensor; and

determining a thickness of an object based on a magnitude of the emitted IR radiation using a controller.

10. The method of claim 9, wherein said step of generating an IR pulse further comprises generating a short electrical current using a controller, thereby causing said IR pulse.

11. The method of claim 10, wherein said electrical current has a duration of less than 3 ms.

12. The method of claim 10, where said electrical current is a low power electrical current.

13. The method of claim 9, wherein said step of generating an IR pulse comprises emitting a radiation pulse which consists essentially of IR radiation.

14. The method of claim 9, wherein said step of generating an IR pulse comprises pulsing a plurality of aligned IR LEDs simultaneously, thereby causing a single pulse.

15. The thermal imaging device of claim 1, wherein said substantially cylindrical component extends radially away from said substantially cup shaped component.

16. The LED flash array of claim 1, wherein said substantially cylindrical component extends radially away from said substantially cup shaped component.

CLAIMS

1. A thermal imaging device comprising:

an LED flash array having a first opening in a substantially cylindrical component of said LED flash array and a second opening in a substantially cup shaped component of said LED flash array, wherein said second opening has a larger circumference than said first opening;

a sensor capable of detecting IR radiation; and

a controller coupled to said LED flash array and said sensor, said controller capable of causing said LED flash array to emit a pulse of radiation, such that said sensor detects IR radiation radiated off an object in front of said thermal imaging device.

2. The thermal imaging device of claim 1, wherein said LED flash array comprises a housing body having a plurality of LED sockets, and an LED installed in each of said LED sockets.

3. The thermal imaging device of claim 2, wherein each of said LED's is an Infra-Red (IR) LED.

4. The thermal imaging device of claim 3, wherein each of said IR LED's emits IR radiation and radiation across the remainder of the electromagnetic spectrum when a current is applied, and wherein said IR radiation is a high intensity relative to said radiation across the remainder of the electromagnetic spectrum.

5. The thermal imaging device of claim 4, wherein said IR radiation consists essentially of wavelengths in the inclusive range of 770 nm to 1 mm.

6. The thermal imaging device of claim 2, wherein said LED flash array housing has a substantially circular cross section.

7. The thermal imaging device of claim 6, wherein each of said LED sockets is arranged such that each installed LED shares at least one focal point.

8. The LED flash array of claim 1, wherein said substantially cylindrical component is tube shaped.

9. A method for creating a thermal image comprising;

generating an infra-red (IR) pulse using an array of LEDs controlled by a controller wherein said array of LEDs has a first opening in a substantially cylindrical component of said LED flash array and a second opening in a substantially cup shaped component of said LED flash array, wherein said second opening has a larger circumference than said first opening;

sensing emitted IR radiation using a sensor; and

determining a thickness of an object based on a magnitude of the emitted IR radiation using a controller.

10. The method of claim 9, wherein said step of generating an IR pulse further comprises generating a short electrical current using a controller, thereby causing said IR pulse.

11. The method of claim 10, wherein said electrical current has a duration of less than 3 ms.

12. The method of claim 10, where said electrical current is a low power electrical current.

13. The method of claim 9, wherein said step of generating an IR pulse comprises emitting a radiation pulse which consists essentially of IR radiation.

14. The method of claim 9, wherein said step of generating an IR pulse comprises pulsing a plurality of aligned IR LEDs simultaneously, thereby causing a single pulse.

15. The thermal imaging device of claim 1, wherein said substantially cylindrical component extends radially away from said substantially cup shaped component.