## CLAIMS

1. A trap for catching or killing insects comprising:

a. a back housing;

b. an insect capture or killing mechanism disposed in front of the back housing;

c. an insect attracting light source comprising light emitting diodes (LEDs) that emit ultra violet (UV) radiation with a peak wavelength of 360-370 nm; and

d. a cover, comprising openings allowing insects to enter and through which insect attracting light is dispersed, the cover being disposed in front of the back housing;

wherein a plane (X-X) runs parallel to the back housing, the insect capture or killing mechanism, and the cover, and the insect attracting light source is positioned between the cover and the insect capture or killing mechanism and directs light either:

i.) immediately inwardly, perpendicular to the plane (X-X) towards the insect capture and killing mechanism or splayed inwardly, at an angle of 45 degrees to the plane (X-X) towards the insect capture or killing mechanism, with an angle of incidence controlled to a spread of plus 45 degrees to minus 45 degrees relative to the angle of incidence, achieved by the natural configuration of the LEDs or by guides or baffles that channel the insect attracting light in the desired direction, onto the insect capture or killing mechanism and wherein the light is precluded from being directed immediately outwardly through the cover; or

ii.) parallel to the plane (X-X) and with a spread of between plus 60 degrees to minus 60 degrees relative to the plane (X-X), by the natural configuration of the LEDs or by guides or baffles that channel the insect attracting light in the desired direction, and to a centre of the trap away from a perimeter running between the cover and the back housing.

2. The trap as claimed in claim 1 wherein the guides or baffles comprise a carrying member and the LEDs are housed in the carrying member.

3. The trap as claimed in claim 2, wherein the carrying member is shaped such that the light emitted is splayed to a plane (X-X) running parallel to the back housing, the cover, and the insect capture or killing mechanism.

4. The trap as claimed in claim 3, wherein the splay is up to 30 degrees relative to the plane (X-X) towards the insect capture or killing mechanism.

5. The trap as claimed in claim 1, wherein the LEDs are mounted in front of the back

housing and the insect capture or killing mechanism, and behind the cover on a mount.

6. The trap as claimed in claim 5, wherein the mount is positioned at, or inset from, the perimeter running between the cover and the back housing, and comprises a pair of facing LED carrying members, such that the LEDs are orientated in facing relationship and directed parallel to the plane (X-X) to direct light to the centre of the trap.

7. The trap as claimed in claim 6, wherein the pair of facing LED carrying members are substantially U shaped to preclude light from being directed immediately outwardly through the cover or immediately inwardly onto the insect capture or killing mechanism and structured to control the spread of the light to plus 30 degrees to minus 30 degrees relative to the angle of incidence.

8. The trap as claimed in claim 1, further comprising reflectors seated in front of the insect capture or killing mechanism and behind or in front of the insect attracting light source.

9. The trap as claimed in claim 1, wherein the insect attracting light source includes 30-40 LEDs.

10. The trap as claimed in claim 1, which is a smart internet enabled trap.

11. A method of attracting flying insects to an insect trap, comprising:

diffusing light emitted by light emitting diodes (LEDs) which emit ultra violet (UV) radiation with a peak wavelength of 360-370 nm via a light source, wherein the light source is:

i) directed immediately inwardly, perpendicular to a plane (X-X) running parallel to the back housing towards an insect capture or killing mechanism or splayed inwardly, at an angle of 45 degrees to the plane (X-X) towards the insect capture or killing mechanism, with an angle of incidence controlled to a spread of plus 45 degrees to minus 45 degrees relative to the angle of incidence, achieved by the natural configuration of the LEDs or by guides or baffles that channel the light in a direction towards the insect capture or killing mechanism and wherein the light is precluded from being directed immediately outwardly through a cover; or

ii) parallel to the plane (X-X) and with a spread of between plus 60 degrees to minus 60 degrees relative to the plane, by the natural configuration of the LEDs or by guides or baffles that channel the insect attracting light in the desired direction, and to a centre of the trap away from a perimeter running between the cover and the back housing.

12. The method as claimed in claim 11, wherein diffusing the light emitted by the LEDs includes splaying the light to the plane of the back housing and the insect capture or killing mechanism.

13. The method as claimed in claim 12, wherein the splay is up to 30 degrees relative to the plane (X-X) towards the insect capture or killing mechanism.

14. The trap as claimed in claim 3, wherein the splay is up to 15 degrees relative to the plane (X-X) towards the insect capture or killing mechanism.

15. The trap as claimed in claim 2, further comprising at least one reflector seated in front of the insect capture or killing mechanism and behind or in front of the insect attracting light source.

16. The trap as claimed in claim 5, further comprising at least one reflector seated in front of the insect capture or killing mechanism and behind or in front of the insect attracting light source.

17. The trap as claimed in claim 5, wherein the amount is of a substantially circular configuration, such that the LEDs are oriented in facing relationship to direct light to the centre of the trap.