CLAIMS

What is claimed is:

1. A lighting device end cap comprising:-

a housing, said housing having a first portion (2) and a second portion (3), wherein the first portion (2) comprises:-

a substantially circular planar surface (2A); a first at least substantially cylindrical wall (6) that extends from the circumference of the substantially circular planar surface (2A) in a first direction perpendicular to the circular planar surface (2A), wherein the first cylindrical wall (6) is adapted to be capable of coupling to the end of the lighting device (44); and

a second at least substantially cylindrical wall (4) that extends from the circular planar surface (2A) in a second direction that is also perpendicular to the circular planar surface (2A) but opposite the first direction;

wherein the first portion (2) is adapted to be capable of being coupled to an end of a lighting device (44) via at least two substantially parallel prongs (23A, 23B) extending perpendicularly from the circular planar surface (2A) in the first direction, wherein one prong is in electrical connection with a positive terminal of the lighting device (44) and the other prong is in electrical connection with a negative terminal of the lighting device (44), such that the first portion (2) is in electrical connection with said lighting device (44), and wherein the second portion (3) is adapted to be capable of being coupled to an electrical socket of a lighting fixture such that the second portion (3) is in electrical connection with a power supply; and

the first portion (2) and the second portion (3) of the end cap each comprise at least two independent electrical leads (10, 21A, 21B), said at least two independent electrical leads (21A, 21B) extending from the second portion (3) to contact said at least two corresponding electrical leads (10) extending from the first portion (2) such that the power supply and the lighting device (44) are in electrical connection **characterised in that** the lighting device end cap comprises at least one elastic member (9A), said elastic member (9A) being coupled to the first (2) and second (3) portions along a common central axis of rotation of the first (2) and second (3) portions such that the second portion (3) is elastically coupled to and biased against the first portion (2), thereby providing the second portion (3) with restricted linear movement in a direction against the elastic bias and with rotational movement about the central axis relative to the first portion (2), and

wherein each of the at least two independent electrical leads (10) of the first portion (2) comprise at least a substantially semicircular wall (10) that extends perpendicularly in the second direction from the circular planar surface (2A) of the first portion (2), and the at least two independent electrical leads (21A, 21B) of the second portion (3) are prongs which extend perpendicularly from the circular planar surface (3A) of the second portion (3) in the first direction such 25 that each electrical lead (21A, 21B) of the second portion (3) contacts the substantially semi-circular wall (10).

2. The device according to claim 1, wherein the second portion (3) comprises:

a substantially circular planar surface (3A); and an at least substantially cylindrical wall (1) that extends from the circumference of the substantially circular planar surface (3A) in the first direction perpendicular to the circular planar surface (3A), wherein the first cylindrical wall (1) of the second portion (3) is adapted to be capable of coupling to the second at least substantially cylindrical wall (4) of the first portion (2); and

wherein the second portion (3) is capable of being coupled to the electrical socket of the lighting fixture via at least two substantially parallel prongs (7A, 7B) extending perpendicularly from its substantially circular planar surface (3A) in a second direction opposite to the first direction, said prongs (7A, 7B) being adapted to electrically connect with the power supply via the electrical socket of the lighting fixture such that one prong is in electrical connection with a positive terminal of the electrical socket of the lighting fixture and the other prong is in electrical connection with a negative terminal of the electrical socket.

3. The device according to claim 1 or claim 2, wherein the two at least substantially parallel prongs (23A, 23B) of the first portion (2) are in electrical connection with the at least two independent electrical leads (10) of the first portion (2) and wherein the two at least substantially parallel prongs (7A, 7B) of the second portion (3) are electrically connected to the at least two independent electrical leads (21A, 21B) of the second portion (3).

4. The device according to claims 1 - 3, wherein each of the two prongs (21A, 21B) contacts a corresponding substantially semi-circular wall (10), and as the second portion (3) is rotated relative to the first portion (2), each prong (21A, 21B) of the second portion (3) follows the substantially semi-circular shape of the corresponding substantially semi-circular electrical wall (10) thereby ensuring that electrical connectivity between the prongs (21A, 21B) and the substantially semi-circular wall (10) is maintained even after the rotation is completed.

5. The device according to any of claims 1 - 4, wherein the second at least substantially cylindrical wall (4) of the first portion (2) comprises at least one plurality of grooves (12), wherein each of the at least one plurality of grooves (12) is in a symmetrical arrangement from each other along a peripheral edge of the distal end of the second at least substantially cylindrical wall (4) of the first portion (2) and wherein each groove (12) of the plurality of grooves (12) is adapted to receive therein a protrusion that at least substantially corresponds to the shape of the groove (12).

6. The device according to any of claims 2 - 5, wherein the at least substantially circular planar surface (3A) of the second portion (3) comprises at least one protrusion extending perpendicularly therefrom in the first direction and along the second portions (3) at least substantially cylindrical wall's (1) inner surface, said at least one protrusion being at least partly receivable by any one of the plurality of grooves (12) at the distal end of the second at least substantially cylindrical wall (4) of the first portion (2) such that the second portion (3) is rotationally locked with respect to the first portion (2).

7. The device according to any of claims 2 - 6, wherein the wherein the at least substantially cylindrical wall (1) of the second portion (3) has indications along its outer surface to indicate various positions that correspond to incremental angles of rotation of the second portion (3) with respect to the first portion (2).

8. The device according to any of claim 7, wherein each incremental angle of rotation of the second portion (3) with respect to the first portion (2) is between 0 degrees to 90 degrees.

9. The device according to any of claims 1 - 8, wherein the first (2) and second (3) portions of the housing are separate and discrete parts.

10. The device according to any of claims 1 - 9, wherein the first portion (2) is coupled to the second portion (3).

11. The device according to any of claims 1 - 10 wherein the coupling means between the first portion (2) and the lighting device (44), first portion (2) and second portion (3) and second portion (3) and lighting fixture is selected from the group consisting of snap-fit means, tight-fit means or screw-fit means.

12. The device according to any of claims 1 - 11, wherein the elastic member (9A) is a spring (9A) selected from the group consisting of a compression spring, a conical compression spring, a torsion spring, an extension spring or a helical spring.

13. An LED lighting tube (44) comprising:-

an elongated hollow cylindrical body having a first end and a second end;

at least one circuit board within the cylindrical body having at least one LED in electrical connection with the at least one circuit board;

a first lighting device end cap according to any of claims 1-12, said lighting device end cap affixed at the first end of the elongated hollow cylindrical body and in electrical connection with the at least one circuit board; and

a second lighting device end cap, said lighting device end cap affixed at the second end of the *35* elongated hollow cylindrical body, wherein the second lighting device end cap comprises:-

a housing, said housing having a first portion (2) and a second portion (3), wherein the first portion (2) comprises:-.

a substantially circular planar surface (2A); a first at least substantially cylindrical wall (6) that extends from the circumference of the substantially circular planar surface (2A) 45 in a first direction perpendicular to the circular planar surface (2A), wherein the first cylindrical wall (6) is adapted to be capable of coupling to the end of the lighting device (44); and

a second at least substantially cylindrical wall (4) that extends from the circular planar surface (2A) in a second direction that is also perpendicular to the circular planar surface (2A) but opposite the first direction;

wherein the first portion (2) is adapted to be capable of being coupled to an end of a lighting device (44), and

wherein the second portion (3) comprises:

a substantially circular planar surface (3A); and

an at least substantially cylindrical wall (1) that extends from the circumference of the substantially circular planar surface (3A) in the first direction perpendicular to the circular planar surface (3A); wherein the at least substantially cylindrical wall (1) of the second portion (3) is adapted to be capable of non-rigidly coupling to the second at least substantially cylindrical wall (4) of the first portion (2);

wherein the second portion (3) is adapted to be capable of being coupled to an electrical socket of a lighting fixture, via at least two substantially parallel prongs (7A, 7B) extending perpendicularly from its substantially circular planar surface (3A)

in a second direction opposite to the first direction, such that the second portion (3) is in electrical connection with the lighting fixture such that the second portion (3) is in electrical connection with a power supply; said prongs (7A, 7B) being adapted to electrically connect with the power supply via the electrical socket of the lighting fixture such that one prong is in electrical connection with a positive terminal of the electrical socket of the lighting fixture and the other prong is in electrical connection with a negative terminal of the electrical socket;

wherein the second portion (3) comprises at least one fuse (31) located within the second portion (3) and in electrical connection with the power supply; and

at least one elastic member (9A), said elastic member (9A) being coupled to the first (2) and second (3) portions along a common central axis of rotation of the first (2) and second (3) portions such that the second portion (3) is elastically coupled to and biased against the first portion (2), thereby providing the second portion (3) with restricted linear movement in a direction against the elastic bias, and with rotational movement about the central axis relative to the first portion (2);

wherein the first lighting device end cap according to any of claims 1-12, and the second lighting device end cap, are capable of being in electrical connection with an electrical socket of a lighting fixture and a power supply, thereby supporting the LED lighting tube (44) in position with respect to the lighting fixture, and providing electrical connection from the lighting fixture to the LED such that the LED is capable of providing illumination.

14. An LED lighting tube (44) as claimed in claim 13, wherein the fuse (31) is secured to the substantially circular planar surface (3A) of the second portion (3), and wherein the fuse (31) is in electrical connection with the prongs (7A, 7B).