extending in a direction traverse to the length of the body and towards the second connector part when said first connector part is moved towards the second the second connector part and into the engaged position. The conductive components on each of the first and second connector parts electrically connect to each other to form an electrical path between the illumination source and an externa power supply as an incident of the connector parts being moved into the snap-fit engaged configuration.

[0017] The above-mentioned snap-fit connector system addresses some of the problems associated with the use of conventional tombstone type lamp holders for securing LED tube lamps to lighting fixtures. However, it maintains the LED tube lamp in an operating state without providing a means for ground protecting the LED tube heat sink or the internal electrical components of the lamp, thus creating safety and reliability issues for the lamp installation. There is a need for a connector system designed for the unique needs of LED lamp technology that alleviates all safety concerns and provides a safe, reliable and convenient solution that will allow the benefits of LED lamp technology to be fully realized and can be implemented in a cost-effective manner.

Summary of Invention

[0017a] According to a first aspect of the present invention, there is provided a support connector for maintaining an end of a linear LED lamp in an operative state on a light fixture, the linear LED lamp having a body with a length between spaced first and second ends, a source of illumination comprising LED emitters on or within the body, and a first end cap assembly at the first end of the body comprising internal first and second conductive power pins and an internal conductive grounding pin, at least one of the power pins adapted to provide power to the lamp and the grounding pin being connectable to a ground circuit, the pins each having an engagement portion extending in a direction traverse to the length of the body and towards an opening in a sidewall of the first end cap assembly, the support connector comprising:

a nonconductive housing comprising a first portion including a mounting base configured to couple the support connector to a support of the light fixture and a second portion extending from the first portion and configured to be insertable within the opening of the first end cap assembly;

the second portion having sidewalls and a leading end wall extending traverse to the sidewalls, the leading end wall defining first, second and third openings;

first and second power electrical terminals and a grounding electrical terminal each disposed within the second portion in general alignment with a corresponding one of the openings;

the first and second power electrical terminals configured to mate with the engagement portion of a respective one of the first and second conductive power pins when the power pins are inserted through the respective first and second openings and the grounding electrical terminal configured to mate with the engagement portion of the conductive grounding pin when the grounding pin is inserted through the third opening as the end cap assembly is moved relative to the support connector from a position fully separated from the support connector in a path that is transverse to the length of the body into an engaged position;

the second portion having first and second parts on which respective second surfaces are defined, the second surfaces configured to engage corresponding first surfaces defined by the wall inner surface adjacent opposite ends of the opening of the first end cap assembly so that the first and second surfaces are placed in confronting relationship to prevent separation of the end cap assembly and the support connector with the body in the operative state in the engaged position.

[0017b] According to a second aspect of the present invention, there is provided a linear LED lamp having a body with a length between spaced first and second ends and configured to be installed in an operative state in a light fixture, the linear LED lamp comprising:

a source of illumination comprising LED emitters on or within the body;

an elongate heat sink in thermal communication with the LED emitters;

a first end cap assembly at the first end of the body comprising internal first and second conductive power pins and an internal conductive grounding pin, at least one of the conductive power pins adapted to provide power to the lamp and the conductive grounding pin electrically isolated from the conductive power pins and being connectable to a ground circuit, the pins each

having an engagement portion extending in a direction traverse to the length of the body and towards an opening defined in a sidewall of the first end cap assembly without extending through the opening;

the opening configured to receive a leading end portion of a first support connector mounted on the light fixture, the leading end portion having first and second power electrical terminals and a grounding electrical terminal disposed within corresponding first, second and third receptacles in communication with first, second and third openings in a leading end face thereof;

the first and second conductive power pins configured to engage a respective one of the first and second power electrical terminals via the respective first and second openings, and the conductive grounding pin configured to engage the grounding electrical terminal via the third opening, as the first end cap assembly is moved relative to the first support connector from a position fully separated from the first support connector in a path that is transverse to the length of the body into an engaged position;

wherein the first end cap assembly is configured to engage and connect to the first support connector as an incident of the first end cap assembly moving into the engaged position.

[0017c] According to a third aspect of the present invention, there is provided a system comprising a linear LED lamp and first and second support connectors for maintaining the LED lamp in an operative state in the light fixture;

the linear LED lamp comprising:

a body with a length between spaced first and second ends;

a source of illumination comprising LED emitters on or within the body;

an elongate heat sink in thermal communication with the LED emitters;

a first end cap assembly at the first end of the body comprising internal first and second conductive power pins and an internal conductive grounding pin, at least one of the conductive power pins adapted to provide power to the lamp and the conductive grounding pin electrically isolated from the conductive power pins and being connectable to a ground circuit, the pins each having an engagement portion extending in a direction traverse to the length of the body and towards an opening defined in a sidewall of the first end cap assembly without extending through the opening; and

a second end cap assembly at the second end of the body, the second end cap assembly having a sidewall defining an opening configured to receive a leading end portion of a second support connector mounted on the light fixture;

the first support connector comprising:

a nonconductive housing comprising a first portion including a mounting base configured to couple the first support connector to a support of the light fixture and a second portion extending from the first portion and configured to be insertable within the opening of the first end cap assembly;

the second portion having sidewalls and a leading end wall extending traverse to the sidewalls, the leading end wall defining first, second and third openings;

first and second power electrical terminals and a grounding electrical terminal each disposed within the second portion in general alignment with a corresponding one of the openings;

the first and second power electrical terminals configured to mate with the engagement portion of a respective one of the first and second conductive power pins of the lamp when the power pins are inserted through the respective first and second openings and the grounding electrical terminal configured to mate with the engagement portion of the conductive grounding pin when the grounding pin is inserted through the third opening as the end cap assembly is moved relative to the first support connector from a position fully separated from the support connector in a path that is transverse to the length of the body into an engaged position;

the second portion having first and second parts on which respective second surfaces are defined, the second surfaces configured to engage corresponding first surfaces defined by the wall inner surface adjacent opposite ends of the opening of the first end cap assembly so that the first and second surfaces are placed in confronting relationship to prevent separation of the end cap assembly and the first support connector with the body in the operative state in the engaged position;

the second support connector comprising:

a mounting base configured to couple the second support connector to a support of the light fixture and a second portion extending from the first portion and configured to be insertable within the opening of the second end cap assembly, the second end cap assembly configured to engage and mechanically connect to the second support connector as an incident of the second end cap assembly moving relative to the second support connector from a position fully separated from the second support connector in a path that is transverse to the length of the body into an engaged position.

[0017d] According to a fourth aspect of the present invention, there is provided a system comprising a linear LED lamp, a first support connector and second sleeve connector for maintaining the LED lamp in an operative state in the light fixture;

the linear LED lamp comprising:

a body with a length between spaced first and second ends;

a source of illumination comprising LED emitters on or within the body;

an elongate heat sink in thermal communication with the LED emitters;

a first end cap assembly at the first end of the body comprising internal first and second conductive power pins and an internal conductive grounding pin, at least one of the conductive power pins adapted to provide power to the lamp and the conductive grounding pin electrically isolated from the conductive power pins and being connectable to a ground circuit, the pins each having an engagement portion extending in a direction traverse to the length of the body and towards an opening defined in a sidewall of the first end cap assembly without extending through the opening; and

a second end cap assembly at the second end of the body;

the first support connector comprising:

a nonconductive housing comprising a first portion including a mounting base configured to couple the first support connector to a support of the light fixture and a second portion extending from the first portion and configured to be insertable within the opening of the first end cap assembly;

the second portion having sidewalls and a leading end wall extending traverse to the sidewalls, the leading end wall defining first, second and third openings;

first and second power electrical terminals and a grounding electrical terminal each disposed within the second portion in general alignment with a corresponding one of the openings;

the first and second power electrical terminals configured to mate with the engagement portion of a respective one of the first and second conductive power pins of the lamp when the power pins are inserted through the respective first and second openings and the grounding electrical terminal configured to mate with the engagement portion of the conductive grounding pin when the grounding pin is inserted through the third opening as the end cap assembly is moved relative to the first support connector from a position fully separated from the support connector in a path that is transverse to the length of the body into an engaged position;

the second portion having first and second parts on which respective second surfaces are defined, the second surfaces configured to engage corresponding first surfaces defined by the wall inner surface adjacent opposite ends of the opening of the first end cap assembly so that the first and second surfaces are placed in confronting relationship to prevent separation of the end cap assembly and the first support connector with the body in the operative state in the engaged position;

the sleeve connector comprising:

a housing comprising a mounting base configured to couple the sleeve connector to a support of the light fixture and a sleeve portion extending along a length of the light fixture, the sleeve portion having outer wall portions defining a receptacle configured to receive a portion of the second end cap assembly as the second end of the body is moved towards the connector in a direction substantially parallel to the length of the body into an engaged position with the sleeve connector whereby the sleeve connector secures the second end of the lamp body to the light fixture.

Brief Description of the Drawings

[0018] Fig. 1 is a fragmentary, perspective view of an elongate tubular lighting assembly, and showing cooperating connector parts at one end of a body on or within which there is a source of illumination;

[0019] Fig. 2 is a view as in Fig. 1 with the connector parts fully separated from each other;

[0020] Fig. 3 is a view as in Fig. 2 showing cooperating connector parts at the opposite end of the body;

[0021] Fig. 4 is an enlarged, end view of the connector parts shown in the relationship of Fig. 2;

[0022] Fig. 5 is a view as in Fig. 4 with the connector parts joined in an assembled configuration;

CLAIMS

What is claimed is:

1. A support connector for maintaining an end of a linear LED lamp in an operative state on a light fixture, the linear LED lamp having a body with a length between spaced first and second ends, a source of illumination comprising LED emitters on or within the body, and a first end cap assembly at the first end of the body comprising internal first and second conductive power pins and an internal conductive grounding pin, at least one of the power pins adapted to provide power to the lamp and the grounding pin being connectable to a ground circuit, the pins each having an engagement portion extending in a direction traverse to the length of the body and towards an opening in a sidewall of the first end cap assembly, the support connector comprising:

a nonconductive housing comprising a first portion including a mounting base configured to couple the support connector to a support of the light fixture and a second portion extending from the first portion and configured to be insertable within the opening of the first end cap assembly;

the second portion having sidewalls and a leading end wall extending traverse to the sidewalls, the leading end wall defining first, second and third openings;

first and second power electrical terminals and a grounding electrical terminal each disposed within the second portion in general alignment with a corresponding one of the openings;

the first and second power electrical terminals configured to mate with the engagement portion of a respective one of the first and second conductive power pins when the power pins are inserted through the respective first and second openings and the grounding electrical terminal configured to mate with the engagement portion of the conductive grounding pin when the grounding pin is inserted through the third opening as the end cap assembly is moved relative to the support connector from a position fully separated from the support connector in a path that is transverse to the length of the body into an engaged position;

the second portion having first and second parts on which respective second surfaces are defined, the second surfaces configured to engage corresponding first surfaces defined by the wall inner surface adjacent opposite ends of the opening of the first end cap assembly so that the

first and second surfaces are placed in confronting relationship to prevent separation of the end cap assembly and the support connector with the body in the operative state in the engaged position.

2. The support connector according to claim 1, wherein the grounding electrical terminal is spatially arranged relative to the first and second power electrical terminals such that, when the first end cap assembly is moved towards the engaged position, the conductive grounding pin will be electrically coupled to the grounding electrical terminal of the support connector before the first and second conductive power pins are electrically coupled to the first and second power electrical terminals of the support connector.

3. The support connector according to claim 1, wherein the first and second parts are retractable parts, and the second portion of the housing is configured so that the first end cap assembly moves against the second portion as the first end cap assembly moves toward the engaged position thereby causing the first and second retractable parts to reconfigure to allow the first and second surfaces to be placed in confronting relationship.

4. The support connector according to claim 1, wherein the first and second conductive power terminals are each configured to be electrically connected with a power supply.

5. The support connector according to claim 4, wherein the grounding terminal is configured to be electrically connected with a conductive portion of the light fixture on which the support connector is mounted.

6. The support connector according to claim 4, wherein the grounding terminal is configured to be electrically connected with a ground circuit external of the light fixture on which the support connector is mounted.

7. The support connector according to claim 1, wherein second portion of the housing comprises spaced first, second and third elongated receptacles extending generally parallel to each other through the second portion in communication with the openings, the first and second power electrical terminals disposed within the first and second receptacles respectively and the grounding electrical terminal disposed within the third receptacle.

8. The support connector according to claim 7, wherein the first and second power electrical terminals and the grounding electrical terminal each comprise a generally cylindrical contact portion generally aligned with one of the openings and configured to receive a corresponding pin

extending through the opening when the first end cap assembly is moved relative to the support connector into the engaged position.

9. The support connector according to claim 7, wherein the first and second power electrical terminals and the grounding electrical terminal are spatially arranged within the second portion of the housing so that each pin engages its corresponding terminal over a linear distance of at least about 4 mm with the first end cap assembly and support connector in the engaged position.

10. The support connector according to claim 7, wherein the first and second power electrical terminals and the grounding electrical terminal extend within the second portion of the housing to positions spaced from the leading end wall thereof.

11. The support connector according to claim 10, wherein the first and second power electrical terminals and the grounding electrical terminal extend within the second portion of the housing to positions spaced from the leading end wall thereof by at least about 5.5 mm.

12. The support connector according to claim 7, wherein the first and second power electrical terminals and the grounding electrical terminal are electrically isolated from each other by intermediate nonconductive material of the housing.

13. The support connector according to claim 12, wherein the first, second and third openings in the leading end wall of the second portion of the housing are in a triangular arrangement.

14. The support connector according to claim 13, wherein the first and second openings are separated from each other by at least about 2.8 mm, and the third opening is separated from each of the first and second openings by at least about 2 mm.

15. The support connector according to claim 1, wherein the second portion of the housing has a reduced outer profile relative to the first portion of the housing.

16. The support connector according to claim 15, further comprising a shoulder portion at the juncture of the first portion and the second portion of the housing.

17. The support connector according to claim 16, wherein a portion of the wall of the first end cap assembly adjacent the opening resides between the shoulder portion and the second surfaces of the first and second retractable parts with the support connector and first end cap assembly in the engaged position.

18. The support connector according to claim 1, wherein the mounting base is configured to mount the support connector to a standard fluorescent tube lamp light fixture.

19. The support connector according to claim 3, further comprising a first actuator operatively coupled to the first retractable part and a second actuator operatively coupled to the second retractable part, the support connector configured so that with the first end cap assembly in the engaged position the actuators can be repositioned to thereby move the first and second retractable parts towards their respective assembly positions to allow the first end connector to be separated from the support connector.

20. A linear LED lamp having a body with a length between spaced first and second ends and configured to be installed in an operative state in a light fixture, the linear LED lamp comprising:

a source of illumination comprising LED emitters on or within the body;

an elongate heat sink in thermal communication with the LED emitters;

a first end cap assembly at the first end of the body comprising internal first and second conductive power pins and an internal conductive grounding pin, at least one of the conductive power pins adapted to provide power to the lamp and the conductive grounding pin electrically isolated from the conductive power pins and being connectable to a ground circuit, the pins each having an engagement portion extending in a direction traverse to the length of the body and towards an opening defined in a sidewall of the first end cap assembly without extending through the opening;

the opening configured to receive a leading end portion of a first support connector mounted on the light fixture, the leading end portion having first and second power electrical terminals and a grounding electrical terminal disposed within corresponding first, second and third receptacles in communication with first, second and third openings in a leading end face thereof;

the first and second conductive power pins configured to engage a respective one of the first and second power electrical terminals via the respective first and second openings, and the conductive grounding pin configured to engage the grounding electrical terminal via the third opening, as the first end cap assembly is moved relative to the first support connector from a position fully separated from the first support connector in a path that is transverse to the length of the body into an engaged position;

wherein the first end cap assembly is configured to engage and connect to the first support connector as an incident of the first end cap assembly moving into the engaged position.

21. The linear LED lamp according to claim 20, wherein the conductive grounding pin is spatially arranged relative to the first and second conductive power pins such that, when the first end cap assembly is moved towards the engaged position, the conductive grounding pin of the lamp will be electrically coupled to the grounding electrical terminal of the first support connector before the first and second conductive power pins of the lamp are electrically coupled to the first and second power electrical terminals of the first support connector.

22. The linear LED lamp according to claim 20, wherein the first end cap assembly opening is bounded by an edge and the first support connector has first and second retractable parts on which respective second surfaces are defined, the first end cap assembly is configured so that the first and second retractable parts: a) are engaged by the edge of the opening progressively cammed from a holding position, in which the first and second retractable parts reside with the first end cap assembly in the fully separated position, towards an assembly position as the first end cap assembly is moved towards the engaged position; and b) move from the assembly position back towards the holding position with the first end cap assembly in the engaged position.

23. The linear LED lamp according to claim 20, wherein the conductive grounding pin is electrically connected to the heat sink.

24. The linear LED lamp according to claim 20, wherein the source of illumination comprises at least one LED emitter panel secured to the heat sink, each LED emitter panel comprising at least one printed circuit board comprising DC powered LED emitters for emitting and distributing light outwardly from the emitter panel in a light distribution pattern, and the linear LED lamp further comprises a driver module comprising an alternating current (AC) to direct current (DC) driver circuit for driving the LED emitters with DC power.

25. The linear LED lamp according to claim 24, wherein the conductive grounding pin is electrically connected to the driver module.

26. The linear LED lamp according to claim 24, wherein the first end cap assembly further comprises a planar support extending traverse to the length of the body, and the first and second conductive power pins and the conductive grounding pin are mounted to the support and comprise generally L-shaped pins each having a first portion extending in a direction generally parallel to the length of the body and a second portion comprising the engagement portion.

27. The linear LED lamp according to claim 26, wherein the first and second conductive power pins are mounted at positions offset laterally from the mounting position of the conductive grounding pin on opposite sides thereof.

28. The linear LED lamp according to claim 27, wherein the conductive grounding pin is mounted at a position offset from the mounting position of the first and second conductive power pins in the direction towards the opening in the first end cap assembly.

29. The linear LED lamp according to claim 26, wherein the engagement portion of the conductive grounding pin extends beyond the respective engagement portions of the first and second conductive power pins in the direction towards the opening.

30. The linear LED lamp according to claim 29, wherein the engagement portion of the conductive grounding pin and the respective engagement portions of the first and second conductive power pins are configured so that each pin engages the corresponding terminal of the first support connector over a linear distance of at least about 4 mm with the first end cap assembly and support connector in the engaged position.

31. The linear LED lamp according to claim 26, wherein the first portion of the conductive grounding pin is shorter than the respective first portions of the first and second conductive power pins such that the engagement portion of the conductive ground pin is offset in the direction of the length of the body from the engagement portions of the first and second conductive power pins.

32. The linear LED lamp according to claim 26, wherein the conductive grounding pin and the first and second conductive power pins are configured such that the engagement portions thereof can be aligned with the corresponding first, second and third receptacle openings of the leading end face of the first support connector when the first end cap assembly is moved towards the support connector into the engaged position.

33. The linear LED lamp according to claim 32, wherein the conductive grounding pin and the first and second conductive power pins are each separated from each other by a clearance distance of at least about 3 mm.

34. The linear LED lamp according to claim 32, wherein the engagement portions of the conductive grounding pin and of the first and second conductive power pins are each separated from each other by a clearance distance of at least about 3.5 mm.

35. The linear LED lamp according to claim 26, wherein the planar support comprises a connector end board comprising a matingly engagable driver connector, the connector end board has conductive pathways electrically connecting the first and second conductive power pins to the driver connector, and a corresponding matingly engagable connector is associated with the driver module for mechanically and electrically connecting the connector end board to the driver module.

36. The linear LED lamp according to claim 35, wherein the connector end board has an isolated conductive pathway electrically connecting the conductive grounding pin to the driver connector for providing an isolated grounding pathway for the driver module.

37. The linear LED lamp according to claim 36, wherein the driver circuit comprises an input connector for receiving AC current from the connector end board and an output connector for returning DC current to the connector end board, the connector end board electrically connected to the at least one LED emitter panel and distributing said DC current to the at least one LED emitter panel.

38. The linear LED lamp according to claim 35, wherein the connector end board includes conductive pathways electrically connecting the conductive grounding pin to conductive edge portions of the connector end board, the conductive edge portions engaging corresponding conductive fasteners for mechanically securing the first end cap assembly to the heat sink, thereby providing an electrical pathway between the heat sink and the conductive grounding pin.

39. The linear LED lamp according to claim 26, wherein the planar support comprises a connector end board, and the connector end board includes conductive pathways electrically connecting the conductive grounding pin to a connecting terminal mounted on the connector end board to provide an isolated grounding path for internal components of the lamp connected to the connecting terminal.

40. The linear LED lamp according to claim 20, further comprising a second end cap assembly at the second end of the body, the second end cap assembly having a sidewall defining an opening configured to receive a leading end portion of a second support connector mounted on the light fixture, second end cap assembly is configured to engage and mechanically connect to the second support connector as an incident of the second end cap assembly moving relative to

the second support connector from a position fully separated from the second support connector in a path that is transverse to the length of the body into an engaged position.

41. The linear LED lamp according to claim 20, wherein the lamp comprises a second end cap assembly at the second end of the body that is not adapted to receive power from an external power supply, the second end cap assembly configured to interact with a connector sleeve mounted on the light fixture, the connector sleeve comprising a sleeve portion defining a receptacle, the second end cap assembly configured to be insertable within the receptacle as the second end of the body is moved towards the connector sleeve in a direction substantially parallel to the length of the body into an engaged position with the connector sleeve.

42. The linear LED lamp according to claim 41, wherein the second end cap assembly has a cross-sectional geometry in a plane perpendicular to the length of the body that conforms to the cross-sectional geometry of the receptacle of the connector sleeve.

43. The linear LED lamp according to claim 42, wherein the cross-sectional geometry of the second end cap assembly is generally circular.

44. The linear LED lamp according to claim 42, wherein the cross-sectional geometry of the second end cap assembly is non-circular.

45. A system comprising a linear LED lamp and first and second support connectors for maintaining the LED lamp in an operative state in the light fixture;

the linear LED lamp comprising:

a body with a length between spaced first and second ends;

a source of illumination comprising LED emitters on or within the body;

an elongate heat sink in thermal communication with the LED emitters;

a first end cap assembly at the first end of the body comprising internal first and second conductive power pins and an internal conductive grounding pin, at least one of the conductive power pins adapted to provide power to the lamp and the conductive grounding pin electrically isolated from the conductive power pins and being connectable to a ground circuit, the pins each having an engagement portion extending in a direction traverse to the length of the body and towards an opening defined in a sidewall of the first end cap assembly without extending through the opening; and

a second end cap assembly at the second end of the body, the second end cap assembly having a sidewall defining an opening configured to receive a leading end portion of a second support connector mounted on the light fixture;

the first support connector comprising:

a nonconductive housing comprising a first portion including a mounting base configured to couple the first support connector to a support of the light fixture and a

second portion extending from the first portion and configured to be insertable within the opening of the first end cap assembly;

the second portion having sidewalls and a leading end wall extending traverse to the sidewalls, the leading end wall defining first, second and third openings;

first and second power electrical terminals and a grounding electrical terminal each disposed within the second portion in general alignment with a corresponding one of the openings;

the first and second power electrical terminals configured to mate with the engagement portion of a respective one of the first and second conductive power pins of the lamp when the power pins are inserted through the respective first and second openings and the grounding electrical terminal configured to mate with the engagement portion of the conductive grounding pin when the grounding pin is inserted through the third opening as the end cap assembly is moved relative to the first support connector from a position fully separated from the support connector in a path that is transverse to the length of the body into an engaged position;

the second portion having first and second parts on which respective second surfaces are defined, the second surfaces configured to engage corresponding first surfaces defined by the wall inner surface adjacent opposite ends of the opening of the first end cap assembly so that the first and second surfaces are placed in confronting relationship to prevent separation of the end cap assembly and the first support connector with the body in the operative state in the engaged position;

the second support connector comprising:

a mounting base configured to couple the second support connector to a support of the light fixture and a second portion extending from the first portion and configured to be insertable within the opening of the second end cap assembly, the second end cap assembly configured to engage and mechanically connect to the second support connector as an incident of the second end cap assembly moving relative to the second support connector from a position fully separated from the second support connector in a path that is transverse to the length of the body into an engaged position.

46. A system comprising a linear LED lamp, a first support connector and second sleeve connector for maintaining the LED lamp in an operative state in the light fixture;

the linear LED lamp comprising:

a body with a length between spaced first and second ends;

a source of illumination comprising LED emitters on or within the body;

an elongate heat sink in thermal communication with the LED emitters;

a first end cap assembly at the first end of the body comprising internal first and second conductive power pins and an internal conductive grounding pin, at least one of the conductive power pins adapted to provide power to the lamp and the conductive grounding pin electrically isolated from the conductive power pins and being connectable to a ground circuit, the pins each having an engagement portion extending in a direction traverse to the length of the body and towards an opening defined in a sidewall of the first end cap assembly without extending through the opening; and

a second end cap assembly at the second end of the body;

the first support connector comprising:

a nonconductive housing comprising a first portion including a mounting base configured to couple the first support connector to a support of the light fixture and a second portion extending from the first portion and configured to be insertable within the opening of the first end cap assembly;

the second portion having sidewalls and a leading end wall extending traverse to the sidewalls, the leading end wall defining first, second and third openings;

first and second power electrical terminals and a grounding electrical terminal each disposed within the second portion in general alignment with a corresponding one of the openings;

the first and second power electrical terminals configured to mate with the engagement portion of a respective one of the first and second conductive power pins of the lamp when the power pins are inserted through the respective first and second openings and the grounding electrical terminal configured to mate with the engagement portion of the conductive grounding pin when the grounding pin is inserted through the third opening as the end cap assembly is moved relative to the first support connector

from a position fully separated from the support connector in a path that is transverse to the length of the body into an engaged position;

the second portion having first and second parts on which respective second surfaces are defined, the second surfaces configured to engage corresponding first surfaces defined by the wall inner surface adjacent opposite ends of the opening of the first end cap assembly so that the first and second surfaces are placed in confronting relationship to prevent separation of the end cap assembly and the first support connector with the body in the operative state in the engaged position;

the sleeve connector comprising:

a housing comprising a mounting base configured to couple the sleeve connector to a support of the light fixture and a sleeve portion extending along a length of the light fixture, the sleeve portion having outer wall portions defining a receptacle configured to receive a portion of the second end cap assembly as the second end of the body is moved towards the connector in a direction substantially parallel to the length of the body into an engaged position with the sleeve connector whereby the sleeve connector secures the second end of the lamp body to the light fixture.