ABSTRACT

A lighting device includes a body defining a circuitry chamber and including an integrally molded base. The lighting device may also include a light source carried by the body and an electrical contact carried by the body. The lighting device may further include a driver circuit in electrical communication with the light source and the electrical contact. The driver circuit and/or the electrical contact may be integrally connected to the body. A method aspect of the invention is for assembling a lighting device. The method may include integrally forming the base and the body to define an integrally molded base, integrally connecting the driver circuit and/or the electrical contact to the body and fixedly attaching the light source to the body. The method may further include positioning the light source in electrical communication with the driver circuit and positioning the electrical contact in electrical communication with the driver circuit.
LIGHTING DEVICE WITH INTEGRALLY MOULDED BASE AND ASSOCIATED METHODS

RELATED APPLICATIONS

[0001] This application is related to U.S. Provisional Patent Application Ser. No. 61/715,075 titled Lighting Device with Integrally Molded Cooling System and Associated Methods filed Oct. 17, 2012, the content of which is herein incorporated by reference in its entirety.

FIELD OF THE INVENTION

[0002] The present invention relates to the fields of lighting devices and, more specifically, to the design and manufacture of integrally molded base systems for lighting devices, and associated methods.

BACKGROUND OF THE INVENTION

[0003] Lighting technologies such as light-emitting diodes (LEDs) offer significant advantages over incandescent and fluorescent lamps. These advantages include, but are not limited to, better lighting quality, longer operating life, and lower energy consumption. LEDs also are being designed to have more desirable color temperatures than do traditional lamps. Moreover, LEDs do not contain mercury or any other toxic substance. Consequently, a market exists for LED-based lamps as retrofits for legacy lighting fixtures.

[0004] A number of design challenges and costs are associated with replacing traditional lamps with LED illumination devices. Some of these design challenges include thermal management, installation ease, and manufacturing cost control.

[0005] Compared to incandescent and fluorescent lamps, LED-based lighting solutions have relatively high manufacturing and component costs. These costs are often compounded by a need to replace or reconfigure a light fixture that is designed to support incandescent or fluorescent lamps to instead support LEDs. Consequently, the cost of adoption of digital lighting technology, particularly in the consumer household market, is driven by design choices for retrofit LED-based lamps that impact both cost of manufacture and ease of installation.

[0006] U.S. patent application Ser. No. 13/420,794 by Chang and Yen discloses an LED light bulb comprising a light source and a cup-shaped lamp head, with its bottom provided with a power connector. The power connector has a screw-thread connection and an electric connection point. This system of power connector and electric connection point may, however, be a difficult method to maintain when manufacturing lamps with a multi-component design due to the typically labor-intensive and error-prone conventional hand assembly or semi-automated assembly processes employed.

[0007] Much of the cost generated by the manufacture of light bulbs, specifically LED light bulbs, comes out of the time and steps in the manufacturing process. Consequently, lamp designs like those described above, which feature additional assembly and parts, suffer from unfavorable costs.

[0008] This background information is provided to reveal information believed by the applicant to be of possible relevance to the present invention. No admission is necessarily intended, nor should be construed, that any of the preceding information constitutes prior art against the present invention.

SUMMARY OF THE INVENTION

[0009] In view of the foregoing, it is therefore an object of the present invention to provide an improved LED-based lamp for use in a space-limited lamp enclosure, such as a can light fixture. The LED-based lamp may comprise an integrally molded base which, according to embodiments of the present invention, may advantageously position an integrally molded base substantially beneath a molded outer surface. The integrally molded base may also advantageously include a spring clip which may be in electrical communication with the integrally molded base and an external power supply.

[0010] The present invention may advantageously provide an integrally molded base for a lighting device that is designed to operate in a space-limited fixture, and that is inexpensive to manufacture, install, and operate. These and other objects, features, and advantages according to the present invention are provided by a lighting device capable of being in electrical communication with an external power source and providing electrical power to the power supply and at least a portion of the lighting device.

[0011] The lighting device according to an embodiment of the present invention may include a body, a driver circuit, a light source, an electrical contact, a power supply, an integrally molded base, and a heat sink that, when in an assembled configuration, may form an integrally molded enclosure with the light source. The light source may include a light emitting diode (LED) package. The LED package may include an LED and a circuit board functionally coupled to the LED. The electrical contact may comprise at least one of a first, second, and third electrical contact.

[0012] The lighting device according to an embodiment of the present invention may include an optic. A plurality of molded housings may be configured to include an attaching lip and a circuit board receiving section. The sidewalls of the plurality of molded housings may connect to each other. The body may be configured to include a spring clip which may be in electrical communication with at least one of the integrally molded base and the first electrical contact. The spring clip may be integrally molded to the body.

[0013] The present invention may also include a method for manufacturing any of the devices described hereinabove. The method may include the steps of mounting the light source on the circuit board, molding or overmolding the circuit board with the body, and attaching the heat sink to the circuit board and the inner housing. The method may also include molding or overmolding the heat sink with the body, installing electrical circuitry in the outer housing, and integrally molding or overmolding the base to the body.

[0014] The method may further include molding or overmolding the base to the body, attaching the driver circuit to the body, attaching the first electrical contact to the body, and attaching the light source to the body. The method may still further include attaching the spring clip to the body, attaching the spring clip to the base, attaching the spring clip to the first electrical contact, and attaching the spring clip to the light source. The method may also include attaching the spring clip to the driver circuit, electrically coupling the spring clip and the light source, electrically coupling the spring clip and the driver circuit, and electrically coupling the spring clip and the first electrical contact.

[0015] The method may also include electrically coupling the first electrical contact and the second electrical contact, electrically coupling the first electrical contact and the power supply, and electrically coupling the first electrical contact...
and the driver circuit. The method may further include electrically coupling the second electrical contact and the power supply, electrically coupling the second electrical contact and the driver circuit, electrically coupling the power supply and the driver circuit, and electrically coupling the light source and the driver circuit. The method may still further include electrically coupling the third electrical contact and the light source, electrically coupling the third electrical contact and the power supply, electrically coupling the third electrical contact and the driver circuit, and attaching an optic over the inner housing opposite the light source.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of a lighting device having an integrally molded base system according to an embodiment of the present invention.

FIG. 2 is a side elevation view of the lighting device illustrated in FIG. 1.

FIG. 3 is a side sectional view of the lighting device illustrated in FIG. 1 taken through line 3-3 in FIG. 2.

FIG. 4 is an exploded perspective view of the lighting device illustrated in FIG. 1.

FIG. 5 is a side elevation view of an outer housing of the lighting device illustrated in FIG. 1.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

The present invention will now be described fully hereinafter with reference to the accompanying drawings, in which preferred embodiments of the invention are shown. This invention may, however, be embodied in many different forms and should not be construed as limited to the embodiments set forth herein. Rather, these embodiments are provided so that this disclosure will be thorough and complete, and will fully convey the scope of the invention to those skilled in the art. Those of ordinary skill in the art will realize that the following embodiments of the present invention are only illustrative and are not intended to be limiting in any way. Other embodiments of the present invention will readily suggest themselves to such skilled persons having the benefit of this disclosure. Likewise, throughout this disclosure, the present invention may be referred to as relating to luminaires, digital lighting, and light-emitting diodes (LEDs). Those skilled in the art will appreciate that this terminology is only illustrative and does not affect the scope of the invention. For instance, the present invention may just as easily relate to lasers or other digital lighting technologies.

Although the following detailed description contains many specifics for the purposes of illustration, anyone of ordinary skill in the art will appreciate that many variations and alterations to the following details are within the scope of the invention. Accordingly, the following embodiments of the invention are set forth without any loss of generality to, and without imposing limitations upon, the claimed invention.

In this detailed description of the present invention, a person skilled in the art should note that directional terms, such as “above,” “below,” “upper,” “lower,” and other like terms are used for the convenience of the reader in reference to the drawings. Also, a person skilled in the art should notice this description may contain other terminology to convey position, orientation, and direction without departing from the principles of the present invention.

Referring now to FIGS. 1-5, a lighting device 100 that includes an integrally molded base 150 according to an embodiment of the present invention is now described in detail. Throughout this disclosure, the present invention may be referred to as a lighting device 100, a lighting system, an LED lighting system, a lamp system, a lamp, a device, a system, a product, and a method. Those skilled in the art will appreciate that this terminology is only illustrative and does not affect the scope of the invention.

Example methods and systems for lighting devices with an integrally molded base 150 are described herein below. In the following description, for purposes of explanation, numerous specific details are set forth to provide a thorough understanding of example embodiments. It will be evident, however, to one of ordinary skill in the art that the present invention may be practiced without these specific details and/or with different combinations of the details than are given here. Thus, specific embodiments are given for the purpose of simplified explanation and not limitation.

Continuing to refer to FIGS. 1-5, a lighting device 100 including the integrally molded base 150 will now be discussed. Referring more specifically to FIG. 3, the lighting device 100, according to an embodiment of the present invention, may include a light source 110, a heat sink 132, a body 143, an integrally molded base 150, and an optic 160. The integrally molded base 150 may be molded during manufacturing as an integral part of the body 143. The body 143 may comprise an inner housing 122 and an outer housing 142.

The heat sink 132 may be positioned adjacent to the light source 110, and may abut both the inner housing 122 and the outer housing 142. The heat sink 132 may include a plurality of fins 134. For example, and without limitation, the heat sink 132 may present a frustoconical cup into which the inner housing 122 may be positioned such that the outer periphery of the inner housing 122 may contact the inner periphery of the heat sink 132. As an alternative example, and without limitation, the plurality of fins 134 of the heat sink 132 may be configured as projecting flanges into which the inner housing 122 may be positioned such that the outer periphery of the inner housing 122 may make contact with the inner periphery of the fins 134 of the heat sink 132.

The body 143 and the integrally molded base 150 may be made by molding, overmolding, casting, or stamping of a thermally conductive material. Materials may include, without limitation, metals, metal alloys, carbon allotropes, ceramics, polymers, plastics, and composite materials.

Referring now to FIG. 4, the light source 110 of the lighting device 100 according to an embodiment of the present invention is now discussed in greater detail. The light source 110 may include any device capable of emitting light. The light source 110 may, for example and without limitation, include incandescent lights, halogen, fluorescents (including compact-fluorescents), high-intensity discharges, light-emitting semiconductors, such as light-emitting diodes (LEDs), lasers, and any other light-emitting device known in the art. In some embodiments of the present invention, the light source 110 may be an LED package. As illustrated in FIG. 4, for example, the light source 110 is an LED package, and the LED package may include an LED 112 and a circuit board 114. The circuit board 114 may be configured to be functionally coupled to the LED 112. In some further embodiments, the LED package may include a plurality of LEDs and a circuit board.
Referring now back to FIG. 3 and with continuing reference to FIG. 4, the inner housing 122 of the lighting device 100, according to an embodiment of the present invention, is discussed in greater detail. The inner housing 122 may be configured to define an interior volume 124 within a sidewall 126. In one embodiment, the sidewall 126 may have a generally curved shape and may be attached to an attaching lip 128 that may be configured to receive an optic 160.

As illustrated, for example, in FIGS. 2, 3, and 4, the optic 160 may interface with the attaching lip 128 to attach to and be carried by a cooling system 120. Specifically, the optic 160 may form an interference fit with the attaching lip 128, the interference fit providing sufficient strength to carry the optic 160 thereby. Optionally, the optic 160 may be attached to the attaching lip 128 through the use of an adhesive, glue, or any other attachment method known in the art.

Additionally, in some embodiments, the optic 160 may be configured to interact with light emitted by the light source 110 to reflect, refract, or otherwise redirect incident light. Accordingly, the light source 110 may be disposed such that light emitted therefrom is incident upon the optic 160. The optic 160 may be formed in any shape to impart a desired refraction. In the present embodiment, the optic 160 has a generally concave geometry. Furthermore, the optic 160 may be formed of any material with transparent or translucent properties that comport with the desired refraction to be performed by the optic 160.

Additionally, in some embodiments, the optic 160 may include a color conversion layer. The color conversion layer may be a layer of material positioned adjacent an inner surface of the optic 160. The color conversion layer may be configured to receive light within a wavelength range emitted by the light source 110 and to convert the received light into a converted light within another wavelength range. More details regarding the color conversion layer may be found in U.S. patent application Ser. No. 13/745,244 titled Remote Light Wavelength Conversion Device and Associated Methods, the content of which is incorporated herein in its entirety.

As shown in FIG. 3, the end of the inner housing 122 substantially opposite the optic 160 may be configured to define an aperture. A circuit board receiving groove 129 may be presented as a notch in the sidewall 126 of the inner housing 122 positioned generally near the aperture. A circuit board 144 may be mounted in the circuit board receiving groove 129 to form a seal. For example, and without limitation, the interior volume 124 of the inner housing 122 may be isolated from the environment exterior to the lighting device 100 such that fluid from the environment is not able to gain entry to the interior volume 124 and intermix with the fluid contained therein. Hence, a fluid seal may be created about the interior volume 124 of the inner housing 122.

Referring now to FIG. 5, the body 143 of the lighting device 100, according to an embodiment of the present invention, is discussed in greater detail. The body 143 may carry at least one of the light source 110, a driver circuit 115, the inner housing 122, the outer housing 142, the integrally molded base 150, an electrical contact, and a spring clip and may define a circuitry chamber 148. The outer housing 142 of the lighting device 100 that includes the cooling system 120 may include a head 145 and a plurality of fin guards 147. The electrical contact may comprise at least one of a first, second, and third electrical contact 151, 152, 153. For example, at least one of the driver circuit 115, the heat sink 132, the integrally molded base 150, the first electrical contact 151, and the spring clip may be integrally molded to the body 143.

Additionally, in some embodiments, an inner surface of the inner housing 122 that is in optical communication with the interior volume 124 of the inner housing 122 may be generally reflective. In some further embodiments, the inner surface of the inner housing 122 may include a reflective layer positioned thereupon to increase the reflectance of light incident thereupon. Moreover, the inner surface of the inner housing 122 may be configured to reflect light incident thereupon in the direction of the optic 160. Furthermore, in some embodiments, the inner surface of the inner housing may include a color conversion layer as described hereinabove.

For example, and without limitation, the body 143 may be formed into any tubular shape, including a circle, oval, square, rectangle, triangle, or any other polygon. Referring to the embodiment of the lighting device 100 shown in FIG. 3, the body 143 may be substantially hollow to form the circuitry chamber 148. The circuitry chamber 148 may be configured to permit the power supply 140 and electronic control devices to be positioned therewithin. The power supply 140 may be configured to include at least one of the first, second, and third electrical contacts 151, 152, 153 and the driver circuit 115. The circuitry chamber 148 may present a void of sufficient geometry to permit electrical connectors, such as wires, to pass therethrough from the light source 110 to the integrally molded base 150. Those skilled in the art will appreciate that although the integrally molded base 150 is illustrated as being an Edison connector integrally molded into the body 143 of the lighting device 100, the integrally molded base 150 for the lighting device 100 may be provided by any type of connector that is suitable for connecting the lighting device to an external power source, including, but not limited to an Edison base, a bayonet base, a double contact bayonet base, a bi-pin, a bi-post, a wedge, and a GU10 turn and lock base.

In order to maintain a fluid seal between the circuitry chamber 148 and the environment external to the lighting device 100, the body 143 may further include a sealing member. The sealing member may include any device or material that can provide a fluid seal as described above. For example, and without limitation, the sealing member may form a fluid seal between the body 143 and the integrally molded base 150. Other embodiments may have the circuitry chamber 148 disposed on other parts of the cooling system 120 and the body 143.

As perhaps best illustrated in FIG. 2, the head 145 of the outer housing 142 may be positioned to substantially encase the base plate 136 of the heat sink 132 between the inner housing 122 and the outer housing 142. The head 145 may have an aperture adjacent the portion of the heat sink 132 that is in contact with the light source 110 to permit fluid to flow unimpeded from the interior volume 124 through the circuit board 114 and the heat sink 134 to the external environment. The head 145 may also have one or more apertures that allow the plurality of fins 134 of the heat sink 132 to project radially through the head 145 to expose the plurality of fins 134 to the environment external to the lighting device 100.

In at least one embodiment of the invention, and as illustrated, for example, in FIG. 3, the lighting fixture 100 may comprise the body 143, the light source 110, the first, second, and third electrical contacts 151, 152, 153, the power supply 140, and the driver circuit 115. The body 143 may define the circuitry chamber 148 and include the integrally molded base 150. The light source 110 may be carried by the body 143.
Additionally, the first electrical contact 151 may be carried by the body 143. The power supply 140 may be carried by the body 143 and may comprise the second and third electrical contacts 152, 153. The driver circuit 115 may be in electrical communication with the light source 110 and the third electrical contact 153. The first electrical contact 151 may be positioned in electrical communication with the second electrical contact 152 and the external power source. At least one of the driver circuit 115 and the first electrical contact 151 may be carried by the body 143. For example, the driver circuit 115 and the first electrical contact 151 may be positioned in the body 143 so that the driver circuit 115, the first electrical contact 151, and the body 143 are one device.

In another embodiment, the lighting fixture 100 may comprise the body 143, the light source 110, the first and third electrical contacts 151, 153, the power supply 140, and the driver circuit 115. The body 143 may define the circuitry chamber 148 and include the integrally molded base 150. The light source 110 may be carried by the body 143. Additionally, the first electrical contact 151 may be carried by the body 143. The first electrical contact 151 may be positioned in electrical communication with the power supply 140.

Although only partially illustrated in FIG. 3, the third electrical contact 153 may be positioned in electrical communication with the power supply 140 and the driver circuit 115. The driver circuit 115 may be positioned in electrical communication with the light source 110 and the third electrical contact 153. The driver circuit 115 may be at least one of molded and overmolded to the body 143. In some embodiments, the first electrical contact 151 may be at least one of molded and overmolded to the body 143. Furthermore, although not illustrated, in some embodiments, the spring clip may be fixedly attached to at least one of the body 143, the integrally molded base 150, the first electrical contact 151, the light source 110, and the driver circuit 115. Additionally, the spring clip may be positioned in electrical communication with at least one of the driver circuit 115, the first electrical contact 151, and the external power source.

Referring to FIGS. 3 and 4, a method aspect of the present invention is now described in greater detail. The method according to the present invention is directed to manufacturing a lighting device 100 that comprises the integrally molded base 150 of the present invention being integrally molded with at least one of the inner housing 122, the outer housing 142, and the body 143. The method starts where the body 143 may be formed by integrally molding the integrally molded base 150 into the body 143 which may form a single integral member.

For example, and without limitation, at least one of molding and overmolding of the body 143 and the integrally molded base 150 may be accomplished by any molding process known in the art, including, but not limited to blow molding, sintering, compression molding, extrusion molding, injection molding, matrix molding, transfer molding, and thermoforming. At least one of the driver circuit 115, the first electrical contact 151, the light source 110, the spring clip, and the heat sink 132 may be attached to the body 143. Furthermore, in some embodiments, at least one of the driver circuit 115, the first electrical contact 151, the spring clip, and the heat sink 132 may be integrally molded to the body 143. Additionally, in some embodiments, at least one of the light source 110, the first electrical contact 151, and the spring clip may be electrically coupled to the driver circuit 115.

The light source 110 may be formed by mounting LEDs 112 on a circuit board 114. Some portion of the circuit board 114 may be overmolded with the inner housing 122 such that the circuit board receiving groove 120 may be formed in the sidewall 126 of the inner housing 122, and thereby used to mate the light source 110 with the inner housing 122.

In some embodiments, the heat sink 132 may be positioned over the inner housing 122 such that the base plate 136 of the heat sink 132 may contact the circuit board 114 and such that the inner periphery of the fins 134 of the heat sink 132 may contact the outer periphery of the inner housing 122. Furthermore, some portion of the heat sink 132 may be overmolded with at least one of the inner housing 122, the outer housing 142, and the body 143 such that a head 145 of the outer housing 142 may be formed to contact the base plate 136 of the heat sink 132 opposite the inner housing 122, and such that fin guards 147 may be formed to create a channel within which a fin 134 of the heat sink 132 may be fitted positioned. The fin guards 147 may connect to and mechanically support the body 143 that may be substantially hollow to present the circuitry chamber 148 configured to contain the power supply 140 and electronic control devices within the body 143.

For example, and without limitation, overmolding of the inner housing 122 and the outer housing 142 may be accomplished by any molding process known in the art, including, but not limited to blow molding, sintering, compression molding, extrusion molding, injection molding, matrix molding, transfer molding, and thermoforming. The power supply 140 and other electronic circuitry may be installed into the circuitry chamber 148 of the body 143. The power supply 140 may include the second and third electrical contacts 152, 153 and the driver circuit 115. The method is ended where an optic 160 may be attached to the lighting device 100 at an attaching lip 128.

Additionally, and without limitation, at least one of the body 143 and the integrally molded base 150 may consist of a material having a thermal conductivity of 150 Watts per meter-Kelvin; a material having a thermal conductivity of 200 Watts per meter-Kelvin; aluminum; an aluminum alloy; a magnesium alloy; a metal loaded plastics material; a carbon loaded plastics material; a thermally conducting ceramic material; aluminum silicon carbide material; and a plastic.

Accordingly, the method of manufacture allows a manufacturer of the lighting device 100 to advantageously mold or overmold an integrally molded base 150 integrally into at least one of the inner housing 122, the outer housing 142, and the body 143 in such a way that minimizes costly and error-prone manual assembly, and that supports a lamp design with superior manufacturing characteristics.

The method of manufacture further allows a manufacturer of the lighting device 100 to first mold the body 143 and the integrally molded base 150. The power supply 140, the second and third electrical contacts 152, 153, the circuit board 114, the light source 110, and the driver circuit 115 may be attached to the body 143 through an opening at either end of the circuitry chamber 148. The first electrical contact 151 may be at least one of molded and overmolded with the body 143.

In one method embodiment, the method may be directed to manufacturing the lighting device 100 that comprises the body 143, the light source 110, and the driver circuit 115. The body 143 may define the circuitry chamber 148 and
may comprise the integrally molded base 150 and the first electrical contact 151. The light source 110 may be carried by the body 143. The driver circuit 115 may be carried within the circuitry chamber 148. The method starts wherein the body 143 and a base may be integrally formed to define the integrally molded base 150. At least one of the driver circuit 115 and the first electrical contact 151 may be integrally connected to the body 143. The light source 110 may be fixedly attached to the body 143. The light source 110 may be positioned to be in electrical communication with the driver circuit 115. The first electrical contact 151 may be positioned to be in electrical communication with the driver circuit 115.

Some of the illustrative aspects of the present invention may be advantageous in solving the problems herein described and other problems not discussed which are discoverable by a skilled artisan.

While the above description contains much specificity, these should not be construed as limitations on the scope of any embodiment, but as exemplifications of the present embodiments thereof. Many ramifications and variations are possible within the teachings of the various embodiments.

While the invention has been described with reference to exemplary embodiments, it will be understood by those skilled in the art that various changes may be made and equivalents may be substituted for elements thereof without departing from the scope of the invention. In addition, many modifications may be made to adapt a particular situation or material to the teachings of the invention without departing from the essential scope thereof. Therefore, it is intended that the invention not be limited to the particular embodiment disclosed as the best or only mode contemplated for carrying out this invention, but that the invention will include all embodiments falling within the scope of the appended claims. Also, in the drawings and the description, there have been disclosed exemplary embodiments of the invention and, although specific terms may have been employed, they are unless otherwise stated used in a generic and descriptive sense only and not for purposes of limitation, the scope of the invention therefore not being so limited. Moreover, the use of the terms first, second, etc. do not denote any order or importance, but rather the terms first, second, etc. are used to distinguish one element from another. Furthermore, the use of the terms a, an, etc. do not denote a limitation of quantity, but rather denote the presence of at least one of the referenced item.

Thus, the scope of the invention should be determined by the appended claims and their legal equivalents, and not by the examples given.

What is claimed is:

1. A lighting device comprising:
a body defining a circuitry chamber and including an integrally molded base; and
a light source carried by the body;
an electrical contact carried by the body; and
a driver circuit in electrical communication with the light source and the electrical contact;
wherein at least one of the driver circuit and the electrical contact are integrally connected to the body.

2. The lighting device according to claim 1 wherein at least one of the driver circuit and the electrical contact are integrally connected to the body by at least one of molding and overmolding so as to be integrally molded with the body.

3. The lighting device according to claim 1 wherein the integrally molded base is formed into a standard light socket base selected from the group consisting of an Edison base, a bayonet base, a double contact bayonet base, a bi-pin, a bi-post, a wedge, and a GU10 turn and lock base.

4. The lighting device according to claim 1 wherein a spring clip is fixedly attached to at least one of the body, the integrally molded base, the electrical contact, the light source, and the driver circuit.

5. The lighting device according to claim 4 wherein the spring clip is in electrical communication with at least one of the driver circuit and the electrical contact.

6. The lighting device according to claim 1 wherein at least one of the integrally molded base and the body are at least one of a material selected from a group consisting of a material having a thermal conductivity>150 Watts per meter-Kelvin; a material having a thermal conductivity>200 Watts per meter-Kelvin; aluminum; an aluminum alloy; a magnesium alloy; a metal loaded plastics material; a carbon loaded plastics material; a thermally conducting ceramic material; an aluminum silicon carbide material; and a plastic.

7. The lighting device according to claim 1 wherein the light source comprises a light emitting diode (LED).

8. A lighting device comprising:
a body defining a circuitry chamber and including an integrally molded base;
a light source carried by the body;
an electrical contact carried by the body; and
a driver circuit in electrical communication with the light source and the electrical contact;
wherein the driver circuit and the electrical contact are at least one of molded and overmolded to the body so as to be integrally molded with the body;
wherein a spring clip is fixedly attached to at least one of the body, the integrally molded base, the electrical contact, the light source, and the driver circuit; and
wherein the spring clip is in electrical communication with at least one of the driver circuit and the electrical contact.

9. The lighting device according to claim 8 wherein the integrally molded base is formed into a standard light socket base selected from the group consisting of an Edison base, a bayonet base, a double contact bayonet base, a bi-pin, a bi-post, a wedge, and a GU10 turn and lock base.

10. The lighting device according to claim 8 wherein at least one of the integrally molded base and the body is at least one of a material selected from a group consisting of a material having a thermal conductivity>150 Watts per meter-Kelvin; a material having a thermal conductivity>200 Watts per meter-Kelvin; aluminum; an aluminum alloy; a magnesium alloy; a metal loaded plastics material; a carbon loaded plastics material; a thermally conducting ceramic material; an aluminum silicon carbide material; and a plastic.

11. The lighting device according to claim 8 wherein the light source comprises a light emitting diode (LED).

12. A method for assembling a lighting device, the lighting device having a body defining a circuitry chamber and having a base and an electrical contact, a light source carried by the body and a driver circuit carried within the circuitry chamber, the method comprising the steps of:
integrally forming the base and the body to define an integrally molded base;
integrally connecting at least one of the driver circuit and the electrical contact to the body;
fixedly attaching the light source to the body;
positioning the light source in electrical communication with the driver circuit; and
positioning the electrical contact in electrical communication with the driver circuit.

13. The method according to claim 12 wherein integrally forming the base and the body comprises forming the base and the body as a single integral member.

14. The method according to claim 12 wherein integrally connecting at least one of the driver circuit and the electrical contact to the body comprises at least one of molding and overmolding at least one of the driver circuit and the electrical contact to the body.

15. The method according to claim 12 further comprising fixedly attaching a spring clip to at least one of the body, the integrally molded base, the electrical contact, the light source, and the driver circuit.

16. The method according to claim 12 further comprising electrically coupling a spring clip to at least one of the light source, the driver circuit, and the electrical contact.

17. The method according to claim 12 wherein attaching the light source comprises at least one of molding and overmolding the light source to the body.

18. The method of claim 12 wherein the integrally molded base is at least one of a material selected from a group consisting of a material having a thermal conductivity of 150 Watts per meter-Kelvin; a material having a thermal conductivity of 200 Watts per meter-Kelvin; aluminum; an aluminum alloy; a magnesium alloy; a metal loaded plastics material; a carbon loaded plastics material; a thermally conducting ceramic material; an aluminum silicon carbide material; and a plastic.

19. The method according to claim 12 wherein the integrally molded base is formed into a standard light socket base selected from the group consisting of an Edison base, a bayonet base, a double contact bayonet base, a bi-pin, a bi-post, a wedge, and a GU10 turn and lock base.

20. The method according to claim 12 wherein the light source comprises at least one light emitting diode (LED).

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