

AMBIENT LIGHT DEVICE

Background of the Invention

1. Field of the Invention

- 5 The present invention relates to ambient light device, and particularly to an ambient light device to provide a desired lighting atmosphere to suit a room at a specific time.

2. Description of Related Art

10 The advanced development of lighting devices provides ample creation for lighting ambient, for instance, featuring color temperature for living room, dining room or studying room of a home, or varying of color lights to create various types of ambient to any location.

15 For a home, it is common that a certain kind of light atmosphere is preferred to another kind of color light or both, or a mixed of both. In order to efficiently control the desired color of the lighting atmosphere, in many cases, bulbs of different colours are mounted and a separate switch for each is provided. Numerous control parameters of these lighting modules, advanced light controls systems were developed, which are able to assist an end-user in configuring the settings of the lighting modules. These advanced light control systems may be also able to automatically render certain lighting atmospheres in a room, for example from a XML
20 file containing an abstract description of a certain lighting atmosphere, which is automatically processed for generating control values or parameters for the lighting modules of a concrete lighting infrastructure. Generally, lighting atmospheres can be defined as a collection of lighting effects that harmoniously concur in space and time, for example to create an artificial indoor lighting.

25 Artificial indoor lighting was primarily meant to play the role of sunlight and enable people to develop tasks by supplying adequate illumination levels. The so-called ambient lighting and task lighting cases in indoor lighting clearly exemplify these functions.

30 US2006/0076908 relates to lighting networks that include multiple LED-based lighting units, and user interfaces to facilitate control of such networks. Lighting units of a lighting network may be configured to generate one or more of variable colour light, variable intensity light and variable colour temperature white light. Different areas of an environment in which light is provided by the lighting network may be divided into respective lighting zones, and some or all of the lighting units of the lighting network
35 may be configured so as to provide controllable lighting in one or more such lighting zones. One or more user interfaces are configured so as to allow relatively simplified and intuitive control of the lighting network, either manually (in real time) or via one or more user selectable predetermined lighting programs.

40 US Patent No. 8441202 discloses an illumination apparatus comprising a plurality of LEDs and a control system connected to receive dimmer-modulated AC line voltage and control the plurality of LEDs. The control system is configured to operate in a

default mode wherein changes in dimmer-modulated AC line voltage adjust a first characteristic of the plurality of LEDs until the dimmer-modulated AC line voltage manifests a mode change condition, enter a selected mode wherein changes in dimmer-modulated AC line voltage adjust a second characteristic of the plurality of LEDs upon determining that the dimmer-modulated AC line voltage manifests the mode change condition, and, enter a different mode after the dimmer-modulated AC line voltage remains unchanged for a first predetermined time period.

US Patent No. 8,508,141 discloses a light control apparatus for a LED light-emitting device comprises a driving current supply unit supplying an AC current as a driving current via a pair of terminals to the LED light-emitting device including a set of LED elements having mutually different light emission wavelength regions connected in parallel while providing opposite polarities and the pair of terminals provided to supply the driving current to the set of LED elements; an individual amount defining unit defining a positive driving current amount and a negative driving current amount respectively to be supplied to the LED light-emitting device in a positive half cycle and a negative half cycle included in one cycle of the AC current respectively.

US Patent No. 8,463,408 discloses an automatic rendering of a lighting scene with a lighting system, particularly the control of the rendering. Rendering of the lighting scene by decomposing a lighting atmosphere to be rendered in elementary light effects, to classify the elementary light effects, and to coordinate the realization of the classified light effects with the lighting system. A light control system for automatically rendering the lighting atmosphere with the lighting system, wherein the light control system is adapted for decomposing the lighting atmosphere to be rendered in elementary light effects, classifying the elementary light effects into sets of light effects, and coordinating the realization of the sets of light effects with the lighting system. An automatic light control system to autonomously determining the lighting configuration settings needed by light modules of the lighting system to realize a desired lighting atmosphere while its elementary lighting effects are harmonically rendered.

US Patent No. 6,118,231 discloses a combination with a system for controlling the brightness of a room illuminated by a plurality of individual light sources or groups of light sources, wherein the ratio of the light intensities of the individual light sources or groups of light sources can be set or changed: a control device connected to each of said individual or groups of light sources; and two control elements connected to said control device, said control device being operative in response to the adjustment of one of said control elements to change the intensity of each of said light sources in a manner to change the overall brightness of the room while maintaining a constant ratio of the brightnesses of the individual light sources or groups of light sources, and said control device also being operative in response to the adjustment of the other control element to change the ratio of the brightnesses of the individual light sources or groups of light sources.

SUMMARY OF THE INVENTION

Accordingly, an object of the invention is to provide an ambient light control device comprising: a plurality of LEDs bulbs including a first color LED and a second color

LED; a control means connected to the PCB where the LEDs are mounted to control the plurality of LEDS, wherein the control means is provided with three modes of operations to a white light mode, and second mode is an orange light mode and a third mode where the white light and the orange light LEDs are lighted.

- 5 Still a further object of the present invention is to provide an ambient light control device, wherein the control means is provided with a selector to select the color of the LEDs to be lighted.

A further object of the present invention is to provide an ambient light control device, wherein the selector is made to control the switching ON of one specific LED and/or
10 both.

Still a further object of the present invention is to provide an ambient light control device, wherein the LEDs are arranged in series on a PCB and are connected to the control means by a plurality of wires.

- 15 Yet a further object of the present invention is to provide an ambient light control device, wherein the control means configured to select the LEDs to be lighted.

For achieving the foregoing objects, the invention provides an ambient light control device where the LEDs are controlled and the intensity of the lights is constant throughout.

- 20 These, and other objects, will be readily evident, upon a study of the following specification, and the accompanying drawing, wherein:

BRIEF DESCRIPTION OF THE DRAWINGS

- The accompanying drawings are included to provide a further understanding of the invention, and are incorporated in and constitute a part of this specification. The drawings illustrate embodiments of the invention and, together with the description,
25 serve for explaining the principles of the invention.

FIG. 1 a schematic view showing the arrangement of a plurality of LED bulb on a PCB in accordance with a preferred embodiment of the present invention.

Figs 2 and 3 are circuit drawings of the control of ambient light device in accordance with the preferred embodiment of the present invention.

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DESCRIPTION OF THE PREFERRED EMBODIMENT

FIG. 1 a schematic view showing the arrangement of a plurality of LED light on a PCB in accordance with a preferred embodiment of the present invention.

- 35 Referring to FIG. 1, there is provided an ambient light control device comprising: a plurality of LEDs bulbs including a first color LED and a second color LED; a control means connected to a PCB, where the LEDs are mounted thereon and the plurality of the LEDS are controlled, wherein the control means is provided with three modes of operations include a white light mode, and second mode being an orange light

mode and a third mode where the white light and the orange light LEDs are lighted together.

In the preferred embodiment of the present invention, a total of 48 bulbs are used, and three control means are employed to control the lighting of the LED bulbs. The
5 ambient light control device of the present invention has the control means which is provided with a selector to select the color of the LEDs to be lighted.

As shown in the figures, the ambient light control device of the preferred embodiment of the present invention is provided with a selector, wherein the selector is made to control the switching ON of one specific LED and/or both. As shown in FIG. 1, the
10 pluralities of LEDs are arranged in series on a PCB and are connected to the control means by a plurality of wires. In the present invention, the control means is configured to select the LEDs to be lighted. In other words, the control means is configured to change from one color mode to another color mode by allowing one color LEDs to be lighted and the other color LEDs not to be lighted.

15 In the course of switching the control means from one mode to another mode, the intensity of the color light remains constant for one color light and for a second colour light.

In accordance with the present invention, if a white light ambient is needed; the selector on the light control device is moved to a selection such that all the white light
20 LEDs are lighted. When another color LED ambient is needed, similarly, the selector is moved to another position on the light control device such that the colors LED are lighted. If the ambient requires a mix of the white light and the other color light, the selector is moved to another light such that all the LED lights are lighted. By this means of controlling the ambient light, it is very convenient to the users, and the
25 required color ambient lighting can be achieved at an instant second.

FIG. 2 is a circuit diagram illustrating the driving means of the lighting device; two diodes are connected to a positive pole such that only one set of LED will be lighted. When V_{o+} is connected to the positive terminal, -1 and -2 as shown in FIG. 3 will be respectively connected to the anode of the two LEDs set.

30 Referring to FIG. 3, if SK1 is triggered, PIN1 of the SK1 will be switched among the leg of 2, 3, or 4. When PIN 1 and PIN 2 are connected, V_{o+} and -2 have voltage output and yellow LED is lighted but white LED is not lighted. When PIN1 and PIN3 are connected, V_{o+} , -1, -2 all have voltage, and two group of LED will be lighted. When PIN1 and PIN4 are connected, V_{o+} has voltage, and white LED is lighted but
35 yellow LED is not lighted.

It will be apparent to those skilled in the art that various modifications and variations can be made to the structure of the present invention without departing from the scope or spirit of the invention. In view of the foregoing, it is intended that the specification and examples to be considered as exemplary only, with a true scope
40 and spirit of the invention being indicated by the following claims and their equivalents.

CLAIMS:

1. An ambient light control device comprising:
a plurality of LEDs bulbs including a first color LED and a second color LED;
a control means connected to the PCB where the LEDs are mounted to
control the plurality of LEDS, wherein the control means is provided with three
modes of operations to a while light mode, and second mode is an orange
light mode and a third mode where the white light and the orange light LEDs
are lighted.
2. The ambient light control device set forth in Claim 1, wherein the control
means is provided with a selector to select the color of the LEDs to be lighted.
3. The ambient light control device set forth in Claim 2, wherein the selector is
made to control the switching ON of one specific LED and/or both.
4. The ambient light control device set forth in Claim 2, wherein the LEDs are
arranged in series on a PCB and are connected to the control means by a
plurality of wires.
5. The ambient light control device set forth in Claim 1, wherein the control
means configured to select the LEDs to be lighted.
6. The ambient light control device according to claim 1, wherein the control
means is configured to change from one color mode to another color mode by
allowing one color LEDs to be lighted and the other color LEDs not to be light.
7. The ambient light control device according to claim 1, wherein the intensity of
the color light remains constant for one color light and for a second colour
light.