

AN LED LAMP SET

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to an LED lamp set. In particular, this
5 invention relates to an LED lamp set that can be an indoor lighting device. A
frame is installed in the building and the LED lighting device is located on the
frame to increase the illumination in the building.

2. Description of the Related Art

Lamplights play an important role allowing our activities in the evening
10 to take place. Living, working, and entertaining all require the light provided by
lamplights.

FIG. 1 shows a lighting device in a building of the prior art. A plurality
of frames 1 are installed in the ceiling. The frame 1 has a plurality of lamp sets
10. The lamp sets 10 are located on the separated spaces 11. A second
15 separated space 11' without the lamp set 10 has a separating board 12 for
covering the ceiling of the build. The lamp set 10 is composed of a lamp device
13, a plurality of lighting devices 14, and a lampshade 15. The lamp device 13
is installed in the separated space 11 of the frame 1. The lighting devices can be
fluorescent tubes, light bulbs, or power-saving light bulbs, and are installed in
20 the lamp device 13. The lampshade 15 is fastened to the bottom of the lamp
device 13. Power is introduced to make the lighting devices 14 generate light to
illuminate the inside of the building.

When the lamp sets 10 are operating continuously, such as 24 hours per
day, large amounts of power is consumed and the usage life of the lamp sets is

short. Therefore, how to reduce the amount of power consumed and lengthen the usage life of the lighting device 14 is important.

Furthermore, the dimension of the lighting device 14 is large and the outline of the lighting device 14 has a fixed type, the lamp device 13 has to fit
5 in with the lighting device 14. The volume of the lamp device 13 is large and the appearance of the lamp device 13 cannot be substantially modified.

When the lamp set is used for exhibiting products or art, the color rendering index of the lighting device 14 is usually 80~85%. The visual effect of exhibited productions is slightly distorted.

10 In daily activities, the color-temperature wavelength of the lighting device 14 is a key index. If the color-temperature wavelength is too high it makes a person's eyes tired and sore. If the color-temperature wavelength is too low it makes a person sleepy and lethargic. The color-temperature wavelength of the lighting device of the prior art is usually fixed. When the user wants to
15 control the color-temperature wavelength according to the situation, the user has to select a second lighting device 14. Even then the ability to control the color-temperature wavelength is limited. Furthermore, the lighting device 14 usually includes mercury that is an environmental toxin that pollutes the environment when the lighting device 14 is thrown out.

20 SUMMARY OF THE INVENTION

One particular aspect of the present invention is to provide an LED lamp set. The amount of power consumer is reduced, the usage life is lengthened, and the cost is decreased. The appearance and the volume of the LED lamp set are also improved. The color rendering index is increased, the

color, the light intensity and the color-temperature wavelength are more easily and controlled, and pollution of the environmental is avoided.

The LED lamp set used as a lighting apparatus in a building includes a plurality of frames installed in the building, and a plurality of LED devices
5 located on the frames. Because the LED has a number of characteristics including low power consumption, long usage life, high color rendering index, small volume, and ease of color control, light intensity, and color-temperature wavelength, the LED is used as a lighting apparatus.

For further understanding of the invention, reference is made to the
10 following detailed description illustrating the embodiments and examples of the invention. The description is only for illustrating the invention and is not intended to be considered limiting of the scope of the claim.

BRIEF DESCRIPTION OF THE DRAWINGS

The drawings included herein provide a further understanding of the
15 invention. A brief introduction of the drawings is as follows:

FIG. 1 is a perspective view of the lighting device in a building of the prior art;

FIG. 2 is a perspective view of the present invention;

FIG. 3 is a schematic diagram of the frame of the present invention
20 being directly fastened to a ceiling;

FIG. 4 is a schematic diagram of the frame of the present invention being fastened to a wall;

FIG. 5 is a schematic diagram of the present invention using a strip shaped LED module as the lighting apparatus; and

FIG. 6 is a schematic diagram of the LED lamp set of the present invention as a running lamp to indicate an emergency escape path.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Reference is made to FIG. 2. In this embodiment, the LED lamp set 2
5 utilizes a plurality of hanging devices 21 to hang the LED lamp set 2 on the ceiling (not shown in the figure). Therefore, the LED lamp set 2 is fastened on to the ceiling. The LED lamp set 2 includes a plurality of frames 22. The frame 22 is made of light steel, metal, or a non-metal solid. The frames 22 are arranged to form a plurality of square grids 23. Each frame 22 has a plurality of
10 circular concave troughs 221. A single LED 222 is embedded into the circular concave trough 221. The LEDs 222 are connected with a circuit unit 223 that is linked with a source of power. The LEDs 222 are used as an LED apparatus. A separating board 231 is installed on the square grid 23 for covering the ceiling. The LED lamp set 2 can also be installed with a control unit (not shown in the
15 figure). When the power supply for the building is cut off, the control unit controls the LED lamp set 2 to use backup power to generate lights with more than two colors so as to light and indicate an emergency escape path by a running lamp method (as shown in FIG. 6).

Reference is made to FIGs. 3 and 4. In this embodiment, the frame 22
20 of the LED lamp set 2 is directly fastened onto a ceiling 30, a wall 32, a beam, or a column via a screw 31 or other methods that can achieve the same function. There are a plurality of circuit units 223 on a surface of the frame 22. Each of the circuit units 223 is connected with an LED 222. When power is introduced, the lighting function is achieved.

Reference is made to FIG. 5. In this embodiment, there are a plurality of stripe shaped grooves 4 on the frames 22. A stripe shaped LED module 4 is embedded into the stripe shaped groove 4 to be an LED lighting device so as to achieve the lighting function.

5 The LED lamp set consumes less power so that power consumption is reduced. The LED lamp set has a longer usage life so that purchasing costs are lowered. The LED lamp set has a high color rendering index so that visual distortion effects on exhibited products is avoided. The color, the light intensity, and the color-temperature wavelength is controlled to make the viewer's eye
10 feel more comfortable so that the viewer's eyes are protected. The LED does not include mercury so that there is no mercury pollution.

 The description above only illustrates specific embodiments and examples of the invention. The invention should therefore cover various modifications and variations made to the herein-described structure and
15 operations of the invention, provided they fall within the scope of the invention as defined in the following appended claims.

WHAT IS CLAIMED IS:

1. An LED lamp set, that is used as a lighting apparatus in a building,
comprising:

a plurality of frames installed in the building; and

5 a plurality of LED devices located on the frames.

2. The LED lamp set as claimed in claim 1, wherein the frame is a light
steel frame.

3. The LED lamp set as claimed in claim 1, wherein the frame is a stripe
shaped frame made of a metal or a non-metal solid.

10 4. The LED lamp set as claimed in claim 1, wherein the frame is
fastened in an inside of a building via a hanging method or a screw locking
method.

5. The LED lamp set as claimed in claim 1, wherein the frames are
arranged as square grids.

15 6. The LED lamp set as claimed in claim 5, wherein a separating board
is installed on each of the square grids.

7. The LED lamp set as claimed in claim 1, wherein the inside of the
building is a ceiling, a wall, a beam, or a column.

8. The LED lamp set as claimed in claim 1, wherein the LED devices are
20 composed of a plurality of LEDs.

9. The LED lamp set as claimed in claim 8, wherein the LED devices are
connected with a single circuit unit or a plurality of circuit units.

10. The LED lamp set as claimed in claim 9, wherein the circuit units
are embedded into the frames or pasted on a surface of the frames.

11. The LED lamp set as claimed in claim 1, wherein the LED devices are a plurality of strip shaped LED modules.

12. The LED lamp set as claimed in claim 1, wherein a control unit is included to control the LED lamp set to execute a running lamp function.