

Doc Code: **TR.PROV**

Document Description: Provisional Cover Sheet (SB16)

PTO/SB/16 (11-08)

Approved for use through 01/31/2014 OMB 0651-0032

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number

Provisional Application for Patent Cover Sheet					
This is a request for filing a PROVISIONAL APPLICATION FOR PATENT under 37 CFR 1.53(c)					
Inventor(s)					
Inventor 1					Remove
Given Name	Middle Name	Family Name	City	State	Country j
Guillermo		Macias	Santa Clarita	CA	US
All Inventors Must Be Listed – Additional Inventor Information blocks may be generated within this form by selecting the Add button.					Add
Title of Invention		TUBE LIGHT WITH IMPROVED LED ARRAY			
Attorney Docket Number (if applicable)		12-10060			
Correspondence Address					
Direct all correspondence to (select one):					
☒ The address corresponding to Customer Number			☐ Firm or Individual Name		
Customer Number			36212		

The invention was made by an agency of the United States Government or under a contract with an agency of the United States Government.	
☒ No.	
☐ Yes, the name of the U.S. Government agency and the Government contract number are:	

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number

Entity Status

Applicant claims small entity status under 37 CFR 1.27

☒ Yes, applicant qualifies for small entity status under 37 CFR 1.27

☐ No

Warning

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.

Signature

Please see 37 CFR 1.4(d) for the form of the signature.

Signature	/David L. Hoffman/			Date (YYYY-MM-DD)	2012-05-17
First Name	David	Last Name	Hoffman	Registration Number (If appropriate)	32469

This collection of information is required by 37 CFR 1.51. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 8 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. This form can only be used when in conjunction with EFS-Web. If this form is mailed to the USPTO, it may cause delays in handling the provisional application.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that : (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to a n other federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

PROVISIONAL APPLICATION

OF

Guillermo Macias

Santa Clarita, CA

ON

**TUBE LIGHT WITH IMPROVED LED
ARRAY**

Docket Number: 12-10060
Sheets of Drawings: Twelve (12)
Sheets of Written Description: Six (6)(INCLUDING THIS COVER)

Attorneys
**HOFFMAN PATENT
GROUP**
28494 Westinghouse Place, Suite 204
Valencia, California 91355
Tel: (661) 775-0300
Fax: (661) 775-9423
Customer No.: 36212

TUBE LIGHT WITH IMPROVED LED ARRAY

BACKGROUND OF THE INVENTION

Field of the Invention

The present invention relates to a tube light with an improved LED array.

Description of the Related Art

Fluorescent bulbs have existed for over 100 years. Many fluorescent bulbs are made in tubular form.

Subsequently, LEDs (light emitting diodes) have been developed. Since LEDs use very little energy and have a relatively long life, in recent years it has been popular to replace existing fluorescent bulbs with LEDs. In order to match the tubular form of a fluorescent bulb, arrays of LEDs are placed on a tube having the same form factor as a fluorescent bulb, such as a T8 or T12 size fluorescent bulb. One such bulb is made by Dialight and is called DuroSite™. For example, in size T8, the bulb in one form uses SMD LEDs in a four foot long tube - 1500 Lumens, Natural White light, 17 Watt, 300 LED, 90V-277V, ETL/UL Approved. There are four different color temperature renderings available:

Warm White:	3700 Kelvin; ~ 1450 lumens	- Yellowish Light
Natural White:	4500 Kelvin; ~ 1500 lumens	- Natural White Light
Daylight White:	5500 Kelvin; ~ 1550 lumens	- Pure White
Cool White:	7000 Kelvin; ~ 1600 lumens	- Bluish Light

Other color renderings may be possible.

In the lighting industry, and particular for TV, stage, auditorium, and/or film studio use, and/or other venues, these lights can often cause an actor to look green, depending upon the skin tone of the actor. Therefore, it is common when using these types of lights, to have to change out all of the banks of lights depending upon what actor or actors or other persons are appearing

under the lights. Commonly, a lighting crew must continually change light bulbs between daylight white (or day white) and tungsten (or warm white), and if desired, other types of white/light.

It is desired to achieve sufficient light of the desired type without changing bulbs.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a schematic view of a bulb in accordance with one embodiment, showing alternating daylight and tungsten (warm white) LEDs;

Fig. 2 is a perspective view of an LED bulb device (a portion thereof) showing connectors at one end (in the form of standard fluorescent bulb connectors) and made in a fluorescent tube format with a cover, e.g., plastic, for the LEDs;

Fig. 3 is a schematic view of the LED bulb device showing the connectors and a power input, as well as a PCB (printed circuit board) on which the LEDs of FIG. 1 would be arrayed, and in this type of bulb, the LEDs may be arrayed only on one side, e.g., a front side, thereof, however, there may be an array on a rear side thereof as well, and picture 2 of Fig. 3 shows a receptor for receiving the bulb device;

Fig. 4 is a chart of parameters for an LED bulb device, e.g., configured in a T12 format, for use with a switch controlling which color is on, and is dimmable;

Figs. 5 to 10 show various test results and specifications for the LED bulb device;

Fig. 11 is a chart of various information concerning the LED bulb device;

Figs. 12 and 13 together form a chart of specifications for one preferred bulb device.

DESCRIPTION OF THE PREFERRED EMBODIMENT(S)

In one preferred embodiment with reference to FIGs. 1 to 4, there is a tubular LED light in the form of a fluorescent tube shape, with an array of four LED bulbs in one direction transverse or perpendicular to a main axis of the tube and facing in one direction, by many rows of such LED bulbs, e.g., at least five (for a total of twenty LEDs), but more preferably at least ten or twenty rows, or even twenty five or more rows (100 or more LEDs). The number of LED rows may vary depending upon size of the bulb device. For example, in a three foot long tube there will be fewer LEDs than a four foot long tube light device, generally in a linear variance given the same diameter.

The LEDs having a daylight (D)(or other light type 1) are alternated in a checkerboard pattern with the LEDs having a tungsten light (T)(or other light type 2 different from type 1). A checkerboard pattern is most preferred but other evenly dispersed/arrayed patterns that produce comparable evenly dispersed light are suitable. The daylight LEDs and tungsten LEDs are evenly/uniformly staggered or substantially evenly/uniformly staggered with no more than about a ten percent variation in uniformity.

FIG. 1 shows one row and column arrangement, the daylight LEDs being element D, and the tungsten LEDs being element T.

Various nonexclusive applications are listed in FIG. 11.

The specifications for LEDs are shown in FIG. 4 and alternatively in FIGS. 12-13.

This inventive LED array may be controlled by a DMX (digital multiplex) controller, such as DMX512 (512 dimmer channels) or any other DMX controller, or other dimmer controllers.

A single switch can turn on the daylight LEDs and turn of the tungsten LEDs and visa versa. Therefore, it is not necessary to change out the LED tube bulb between tungsten and daylight bulbs.

In a most preferred embodiment, because LED manufacturing quality varies greatly, LEDs are first tested and then placed in the array if they meet the specifications sufficient to produce sufficient light from each color light type (type 1 or type 2) of the LED bulb device.

The LED bulb device is preferably in size T8 or T12, but other sizes and types may be used.

In a typical movie, TV or other studio or stage setting, there may be four T12 bulbs (or other size) per light fixture. There may be many light fixtures, e.g., dozens or even hundreds.

With preferred embodiments of the invention, a switch, e.g., located on the lighting device or located remotely (wired or wirelessly triggered), is switched to simply send power to one of the bulb types (type 1) and not to type 2, or switched to another position to send power to the other bulb type (type 2) and not type 1. The switch may have another position to turn all LEDs off. If desired, another position to turn on all LEDs may be used.

The PCB is wired to send power to the bulbs of each type alternately, or to no bulbs, and if desired, to all bulbs, depending on the switch position.

Therefore, no bulb devices need to be switched out when changing between daylight and warm light (or tungsten).

Each LED preferably meets a minimum brightness, as tested e.g., by a brightness meter.

Also, it should be noted that instead of the color temperatures shown in the specifications in the Figures, the following color temperatures may be used:

Tungston 27 - Kelvin threw 33 Kelvin
Daylight 5000 Kelvin threw 5700 kelvin

Although the invention has been described using specific terms, devices, and/or methods, such description is for illustrative purposes of the preferred embodiment(s) only. Changes may be made to the preferred embodiment(s) by those of ordinary skill in the art without departing from the scope of the present invention, which is set forth in the following claims. In addition, it should be understood that aspects of the preferred embodiment(s) generally may be interchanged in whole or in part.

CLAIMS

WHAT IS CLAIMED IS:

An LED lighting device having an alternating arrangement of LEDs providing one type of light and of LEDs providing another type of light, preferably in an elongate form, and preferably of daylight and warm light colors.

FIG. 1

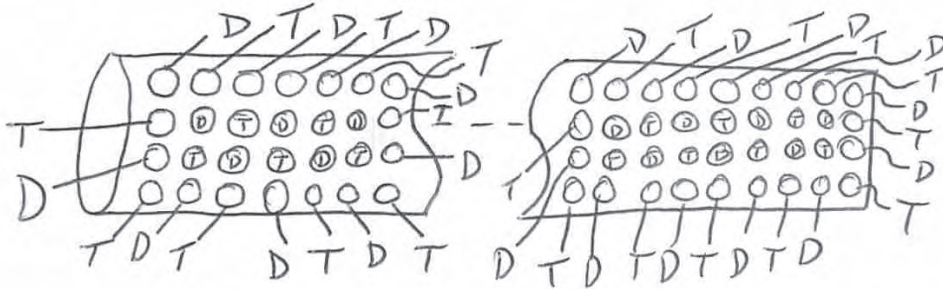


FIG. 2

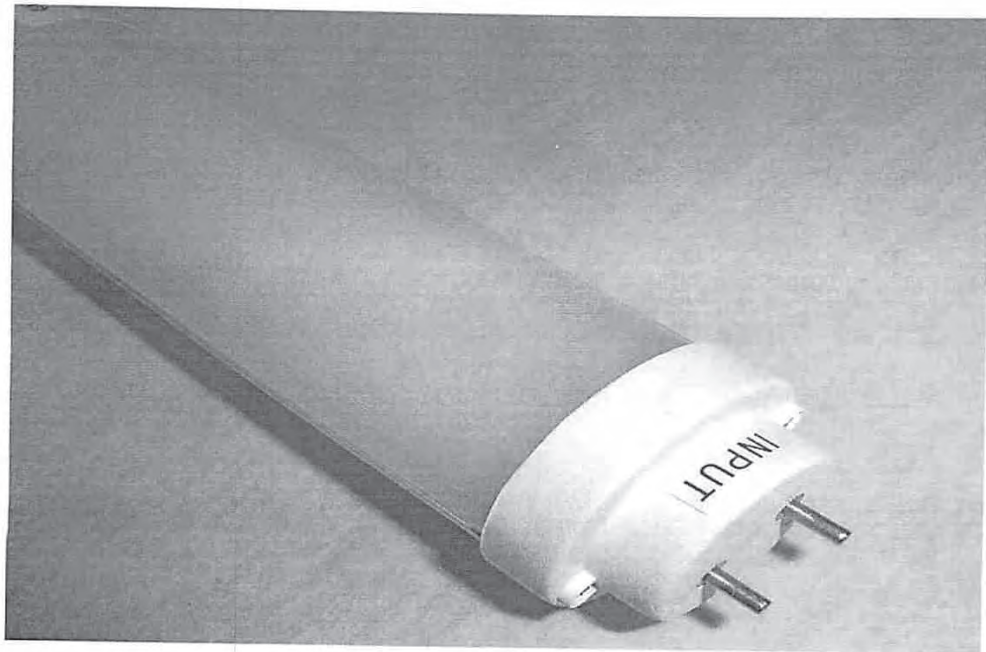
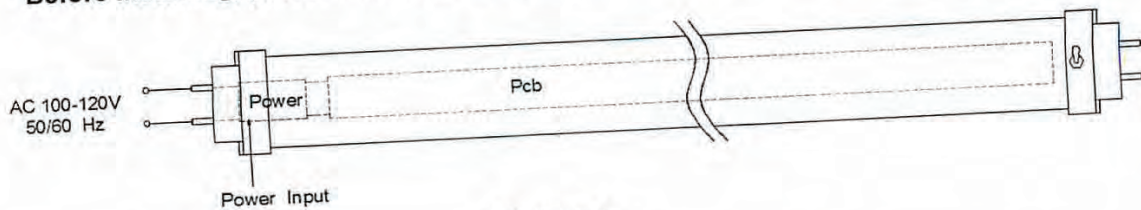


FIG. 3

Install

Step One

Before installing, please check the LED tube structure diagram.(As the picture 1 shows)



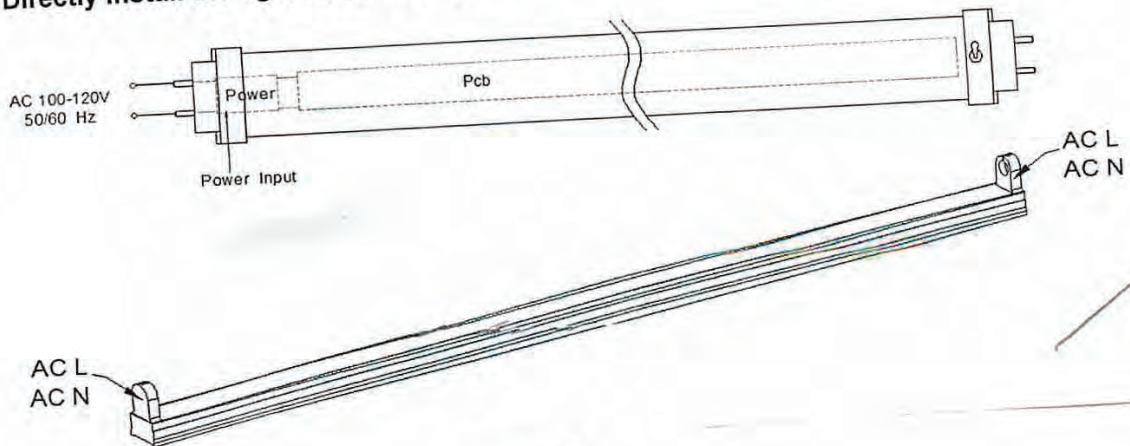
Picture 1

Step Two:

Make sure each side of the fixture has AC"L" and AC"N" Such as the picture 2 shows

Step three:

Directly install the light on the fixture

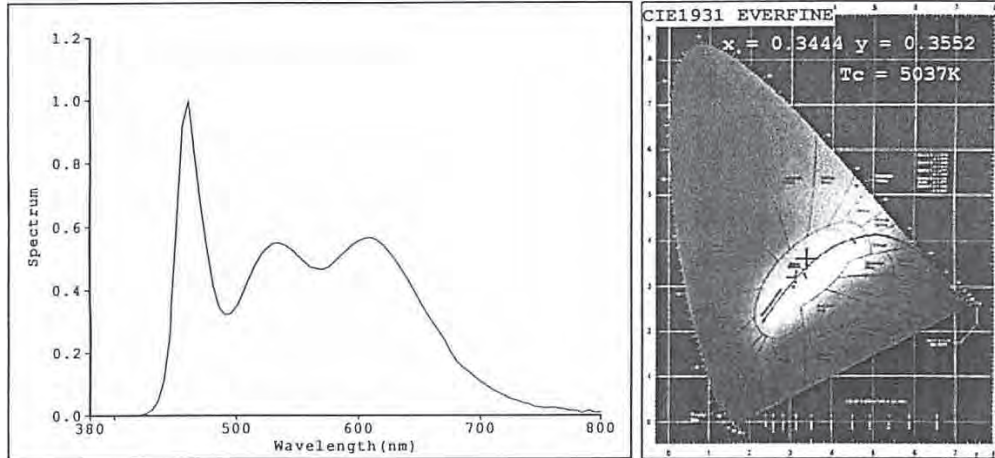


Picture 2

FIG. 4

T12 LED Switch LED Tube Light	
Voltage	AC 110v
Power	20+20w
Type	Dimmable
Control	One switch controls two color
Color Temperature	Warm White:2700-3200 K
	Day White:5000-5500 K
Lumens	Warm White:1010 ±10%
	Day White:1170 ±10%
CRI	>91 Ra

Light Source Test Report



Color Parameters:

Chromaticity Coordinate: $x=0.3444$ ($dx=0.0003$) $y=0.3552$ ($dy=0.0044$)
 Chromaticity Coordinate: $u'=0.3444$ $v'=0.3552$ ($duv=2.06e-03$)
 $T_c=5037K$ Dominant WL: $L_d=570.2nm$ Purity=9.9% Centroid WL: $557.0nm$
 Ratio: $R=19.3\%$ $G=75.2\%$ $B=5.5\%$ Peak WL: $L_p=460.0nm$ HWL: $27.7nm$
 Render Index: $R_a=92.8$

R1 =97	R2 =98	R3 =98	R4 =90	R5 =93	R6 =94	R7 =89
R8 =85	R9 =70	R10=99	R11=95	R12=67	R13=98	R14=100 R15=93

Photo Parameters:

Flux: $1168.3 lm$ Fe: $3.9258 W$ Efficacy: $55.27 lm/W$
 WHITE: ANSI_5000K

Electrical Parameters:

Luminaire: U=110.3V I=0.2542A P=21.14W PF=0.7600

Instrument Status:

Scan Range: 380.0nm-800.0nm	Interval: 5.0nm[0]	$I_p=3909$ ($G=3, D=58$)
REF=36785 (R=4)	$\%=-0.104\%$	PMT: 30.3 centigrade [29.4]

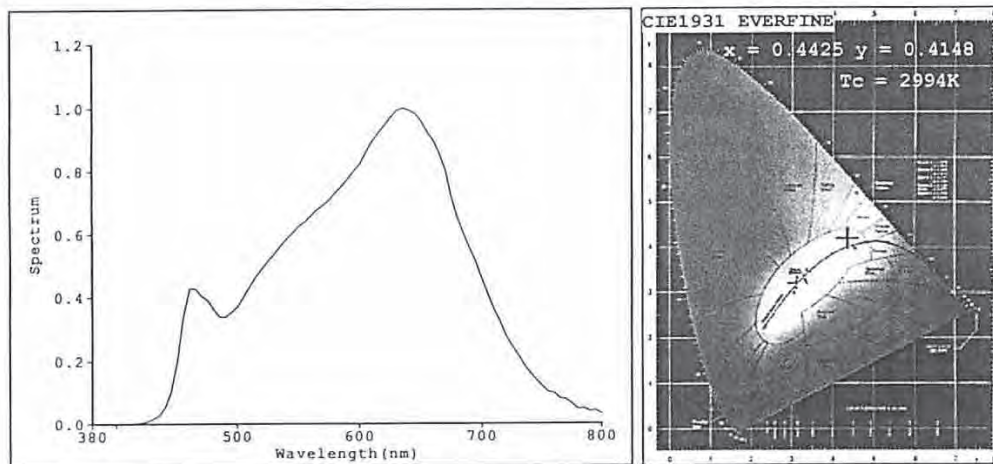
Product Type: T12-1200-带开关 (110V)	Manufacturer: ZHIYUE OPTOELECTRONCS
Number: 扩散正白1	Test Department: ZHIYUE OPTOELECTRONCS
Temperature: 25.3 deg	Humidity: 65.0%
Test Operator: ZhouHePing	Test Date: 2012-05-08 20:05:10
Software: V2.00.121	Instrument: PMS-80_V1 (SN: 11060011)

FIG. 6

Spectrophotometer Test Report

2 Of 6

Light Source Test Report



Color Parameters:

Chromaticity Coordinate: $x=0.4425$ ($dx=0.0003$) $y=0.4148$ ($dy=0.0044$)
 Chromaticity Coordinate: $u'=0.4425$ $v'=0.4148$ ($duv=3.44e-03$)
 Tc=2994K Dominant WL:Ld=581.7nm Purity=57.3% Centroid WL:611.0nm
 Ratio:R=26.1% G=70.8% B=3.1% Peak WL:Lp=635.0nm HWL:173.6nm
 Render Index:Ra=96.0
 R1 =98 R2 =99 R3 =99 R4 =93 R5 =96 R6 =99 R7 =93
 R8 =92 R9 =88 R10=97 R11=95 R12=80 R13=99 R14=99 R15=95

Photo Parameters:

Flux: 1010.3 lm Fe: 3.8129 W Efficacy:47.88 lm/W
 WHITE:ANSI_3000K

Electrical Parameters:

Luminaire: U=110.3V I=0.2582A P=21.10W PF=0.7450

Instrument Status:

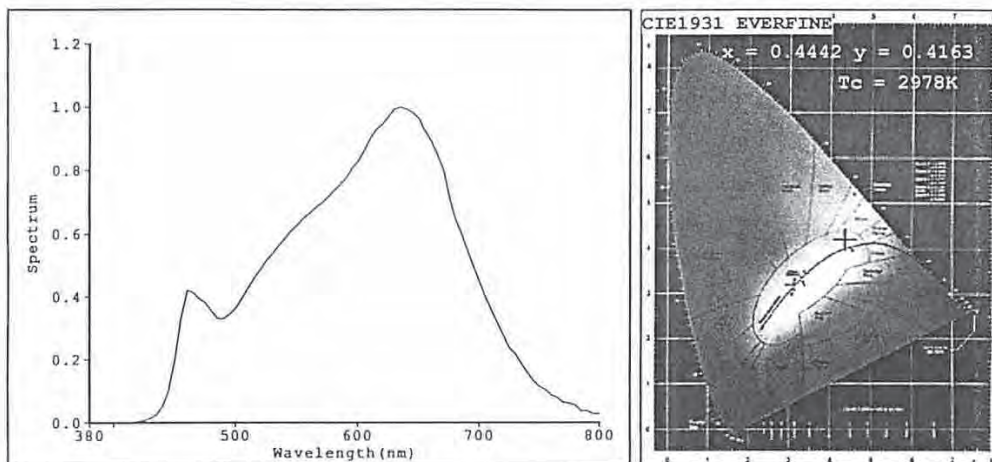
Scan Range:380.0nm-800.0nm Interval:5.0nm[0] Ip=1243 (G=3,D=58)
 REF=32562 (R=4) %=-0.126% PMT: 30.3 centigrade [29.5]

Product Type:T12-1200-带开关 (110V)
 Number:扩散暖白1
 Temperature:25.3 deg
 Test Operator:ZhouHePing
 Software:V2.00.121

Humidity:65.0%
 Test Date:2012-05-08 20:09:08
 Instrument:PMS-80_V1 (SN:11060011)

FIG. 7

Light Source Test Report



Color Parameters:

Chromaticity Coordinate: $x=0.4442$ ($dx=0.0003$) $y=0.4163$ ($dy=0.0044$)
 Chromaticity Coordinate: $u'=0.4442$ $v'=0.4163$ ($duv=3.80e-03$)
 $T_c=2978K$ Dominant WL: $L_d=581.7nm$ Purity=58.3% Centroid WL: $611.0nm$
 Ratio: $R=26.1\%$ $G=70.8\%$ $B=3.0\%$ Peak WL: $L_p=635.0nm$ HWL: $172.0nm$
 Render Index: $R_a=95.8$
 R1 =98 R2 =99 R3 =99 R4 =92 R5 =95 R6 =99 R7 =93
 R8 =92 R9 =85 R10=97 R11=94 R12=80 R13=98 R14=99 R15=94

Photo Parameters:

Flux: 1066.0 lm Fe: 3.9906 W Efficacy: 48.35 lm/W
 WHITE: ANSI_3000K

Electrical Parameters:

Luminaire: U=111.0V I=0.2509A P=22.05W PF=0.7918

Instrument Status:

Scan Range: 380.0nm-800.0nm Interval: 5.0nm[0] $I_p=1265$ ($G=3, D=58$)
 REF=34359 (R=4) $\%=-0.058\%$ PMT: 30.3 centigrade [29.7]

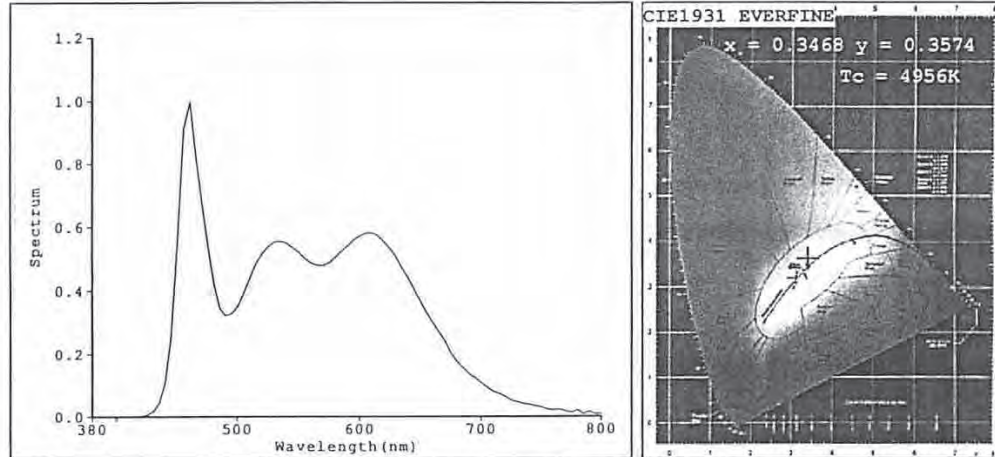
Product Type: T12-1200-带开关 (110V) Manufacturer: ZHIYUE OPTOELECTRONCS
 Number: 扩散暖白2 Test Department: ZHIYUE OPTOELECTRONCS
 Temperature: 25.3 deg Humidity: 65.0%
 Test Operator: ZhouHePing Test Date: 2012-05-08 20:13:05
 Software: V2.00.121 Instrument: PMS-80_V1 (SN: 11060011)

FIG. 8

Spectrophotometer Test Report

4 Of 6

Light Source Test Report



Color Parameters:

Chromaticity Coordinate: $x=0.3468$ ($dx=0.0003$) $y=0.3574$ ($dy=0.0044$)
 Chromaticity Coordinate: $u'=0.3468$ $v'=0.3574$ ($duv=2.21e-03$)
 Tc=4956K Dominant WL:Ld=571.2nm Purity=11.3% Centroid WL:558.0nm
 Ratio:R=19.4% G=75.2% B=5.4% Peak WL:Lp=460.0nm HWL:27.7nm
 Render Index:Ra=91.9
 R1 =96 R2 =98 R3 =97 R4 =87 R5 =91 R6 =95 R7 =87
 R8 =83 R9 =68 R10=98 R11=91 R12=61 R13=98 R14=99 R15=91

Photo Parameters:

Flux: 1235.4 lm Fe: 4.1217 W Efficacy:56.94 lm/W
 WHITE:ANSI_5000K

Electrical Parameters:

Luminaire: U=111.0V I=0.2436A P=21.69W PF=0.8026

Instrument Status:

Scan Range:380.0nm-800.0nm Interval:5.0nm[0] Ip=4052 (G=3,D=58)
 REF=38906 (R=4) %=-0.098% PMT: 30.3 centigrade [29.9]

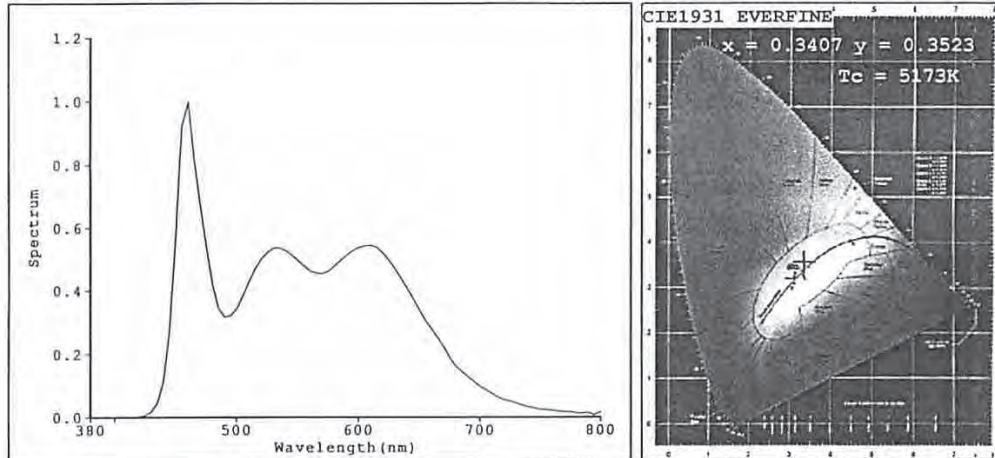
Product Type:T12-1200-带开关 (110V) Manufacturer:ZHIYUE OPTOELECTRONCS
 Number:扩散正白2 Test Department:ZHIYUE OPTOELECTRONCS
 Temperature:25.3 deg Humidity:65.0%
 Test Operator:ZhouHePing Test Date:2012-05-08 20:14:58
 Software:V2.00.121 Instrument:PMS-80_V1 (SN:11060011)

FIG. 9

Spectrophotocolorimeter Test Report

5 Of 6

Light Source Test Report



Color Parameters:

Chromaticity Coordinate: $x=0.3407$ ($dx=0.0003$) $y=0.3523$ ($dy=0.0044$)
 Chromaticity Coordinate: $u'=0.3407$ $v'=0.3523$ ($duv=2.12e-03$)
 $T_c=5173K$ Dominant WL: $L_d=567.5nm$ Purity=7.9% Centroid WL: $555.0nm$
 Ratio: $R=19.0\%$ $G=75.4\%$ $B=5.7\%$ Peak WL: $L_p=460.0nm$ HWL: $27.9nm$
 Render Index: $R_a=92.4$
 R1 =96 R2 =98 R3 =97 R4 =90 R5 =93 R6 =94 R7 =88
 R8 =84 R9 =69 R10=99 R11=94 R12=67 R13=98 R14=100 R15=93

Photo Parameters:

Flux: $1384.1lm$ Fe: $4.6477W$ Efficacy: $62.27lm/W$
 WHITE: ANSI_5000K

Electrical Parameters:

Luminaire: $U=110.9V$ $I=0.2537A$ $P=22.23W$ $PF=0.7902$

Instrument Status:

Scan Range: $380.0nm-800.0nm$ Interval: $5.0nm[0]$ $I_p=4741(G=3,D=58)$
 REF=43522 (R=4) $\%=-0.113\%$ PMT: 30.3 centigrade [29.1]

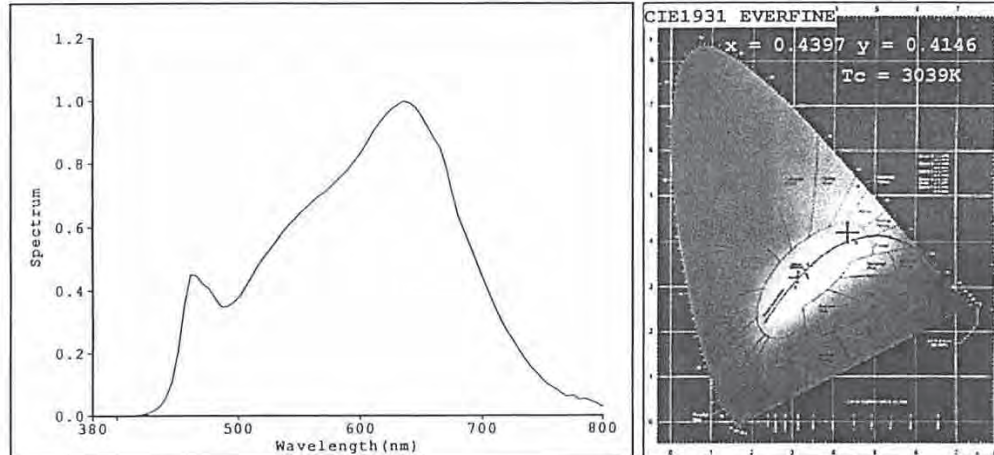
Product Type: T12-1200-带开关 (110V) Manufacturer: ZHIYUE OPTOELECTRONCS
 Number: 透明正白3 Test Department: ZHIYUE OPTOELECTRONCS
 Temperature: 25.3 deg Humidity: 65.0%
 Test Operator: ZhouHePing Test Date: 2012-05-08 20:17:53
 Software: V2.00.121 Instrument: PMS-80_V1 (SN: 11060011)

FIG. 10

Spectrophotometer Test Report

6 Of 6

Light Source Test Report



Color Parameters:

Chromaticity Coordinate: $x=0.4397$ ($dx=0.0003$) $y=0.4146$ ($dy=0.0044$)
 Chromaticity Coordinate: $u'=0.4397$ $v'=0.4146$ ($duv=3.76e-03$)
 $T_c=3039K$ Dominant WL: $L_d=581.4nm$ Purity=56.4% Centroid WL: $609.0nm$
 Ratio: $R=25.7\%$ $G=71.1\%$ $B=3.2\%$ Peak WL: $L_p=635.0nm$ HWL: $174.0nm$
 Render Index: $R_a=95.6$
 R1 =98 R2 =99 R3 =99 R4 =92 R5 =95 R6 =99 R7 =93
 R8 =92 R9 =86 R10=97 R11=94 R12=79 R13=98 R14=99 R15=94

Photo Parameters:

Flux: 1166.2 lm Fe: 4.3428 W Efficacy: 56.84 lm/W
 WHITE: ANSI_3000K

Electrical Parameters:

Luminaire: U=110.9V I=0.2437A P=20.52W PF=0.7502

Instrument Status:

Scan Range: 380.0nm-800.0nm Interval: 5.0nm[0] $I_p=1465$ (G=3, D=58)
 REF=37542 (R=4) $\%=-0.232\%$ PMT: 30.3 centigrade [29.1]

Product Type: T12-1200-带开关 (110V) Manufacturer: ZHIYUE OPTOELECTRONCS
 Number: 透明暖白3 Test Department: ZHIYUE OPTOELECTRONCS
 Temperature: 25.3 deg Humidity: 65.0%
 Test Operator: ZhouHePing Test Date: 2012-05-08 20:21:02
 Software: V2.00.121 Instrument: PMS-80_V1 (SN: 11060011)

FIG. 11

Application

Feature:

- 1) Base : G13
- 2) Available Color : Day White , Warm White
- 3) Aluminum Housing with surface protect, PC milky cover, Clean Cover, Strip Cover
- 4) Working Temperature : -20°C-40°C
- 5) Lifespan : 40,000HRS
- 6) No IR and No UV
- 7) Color Temperature adjust
- 8) Switch control two color: warm white and day white

Application:

- ★ Direct replace traditional fluorescent light.
 - ★ For showroom using.
 - ★ As the sample to show your client the different color temperature
 - ★ For home using. Day white for reading, warm white for life
 - ★ For hotel using, not only can meet the warm white but also meet day white requirement.
- They do not need buy two lights for both color.

Warranty:

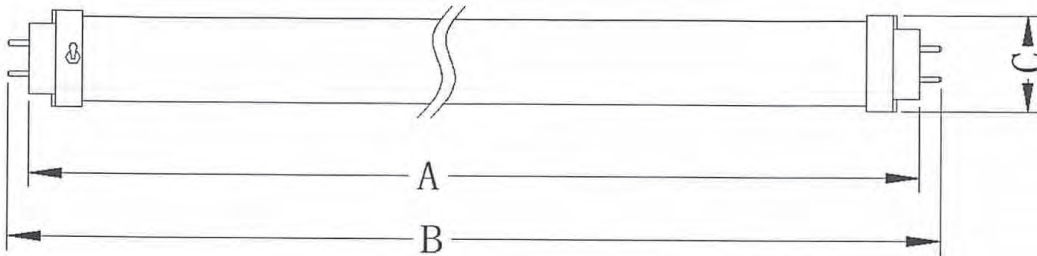
We promise 3 years warranty. You can get new one if the LED light is out of working because of the quality. If you are our agent, we do not only allow you to change the new light, but also we pay your freight charge.

Notice :

- 1) No pushing
- 2) Carrying carefully.
- 3) Be Sure working under right voltage
- 4) Only indoor Using
- 5) No twisting when power is on

Specification

Dimension



F16.12

Basic specification

Part No. Parameter	T12-120CM		
Dimension(mm)	A=1198MM	B=1213MM	C=41MM
Main material	Aluminum+PC		
Power consumption(W)			≤20.5W
Input voltage(V)	AC100-120V		
LED quantity(Pc)	576		
LED type	3528 SMD		

Color temperature(K)	2800-3300(M) / 5000-5500(W)
Luminous flux(Lm)	M: 1050±10%
	W: 1200±10%
Rendering index	>92
Socket type	G13
Weight(kg)	0.89±0.01
Inner box (cm)	φ Φ49*1240
Carton (cm)	L1250*W260*H235mm (1/20)
Life expectancy(h)	40,000

FIG. 13