

Instructions for use

Model:YTLED
Two-headed LED

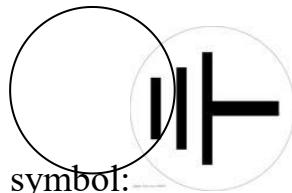


warn:

I、warning and prompt instructions

1, if found that the bulb is not lit, should first cut off the power supply, check whether the power supply fuse is burned out, fuse in the base guard obvious position, and treatment (fuse:F5AL250V, 6.3mm, 32mm long).

2, the user ground wire should be reliable connection in the product's ground terminal, the ground wire in the ground symbol obvious. Such as the ground



symbol:

3, focus on the handle jacket with detergent disinfection, can be 75% alcohol and other liquid soaked disinfection.

4, in the surgical shadowless lamp system, the radiation degree of the two lamp head overlapping lighting area is in danger of overheating, may exceed 1000W/m².

II、The weight borne by the ceiling, fixing bolts and fixing plates is not only the weight of the shadowless lamp itself, but also the weight attached to the traction, shaking and twisting, so when installing the fixed lifting bolts and fixing plates, pay full attention to strengthening their robustness. The hanging shadowless lamp foundation must be able to withstand more than 650 kg of load.

III、Please read the instructions carefully before using this product.

【Product Structure Performance】

LED surgery shadowless lamp consists of a number of lamp heads, petal-shaped, fixed on the balance arm suspension system, positioning stability, can do vertical or circular movement, to meet the needs of different heights and angles in surgery. The whole shadowless lamp has the mother lamp, the child lamp composition. The parent and sub-lights all include 8 sets of modules: each module of the mother lamp consists of 10 lamp beads, seven of which are warm white, represented in yellow, three are cold white, represented by gray, seven warm whites are connected into a group, and three are cold white strings Joined into a group called High Brightness Lighting EmitingDiode, each module consists of six beads, four of which are warm white, represented in yellow and two are cold white, four warm whites in series into one group, two cold whites in series into one group.

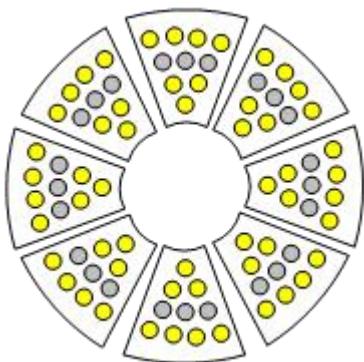


Figure 1 700 female LED layout diagram

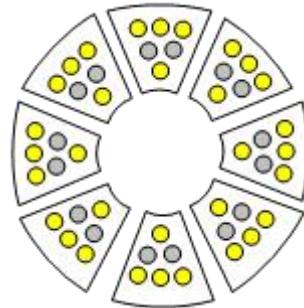


Figure 2 500 sub-lamp LED layout diagram

The two beads can control their brightness by PWM, enabling overall brightness and color temperature adjustment. Each module is independent of each other, and if one module is damaged, the others can continue to work, so the impact on the operation is small. One of the lamp beads (warm, cold) of each

module is driven by an OCP2185 individually and, depending on the user's needs, accepts a microprocessor (MCU) STC15F104E PWM pulse width control, which can be adjusted without stages and current flows through each LED from approximately 120 to 320 mA. The LED shadowless lamp electrical schematic is shown in Figure 1.

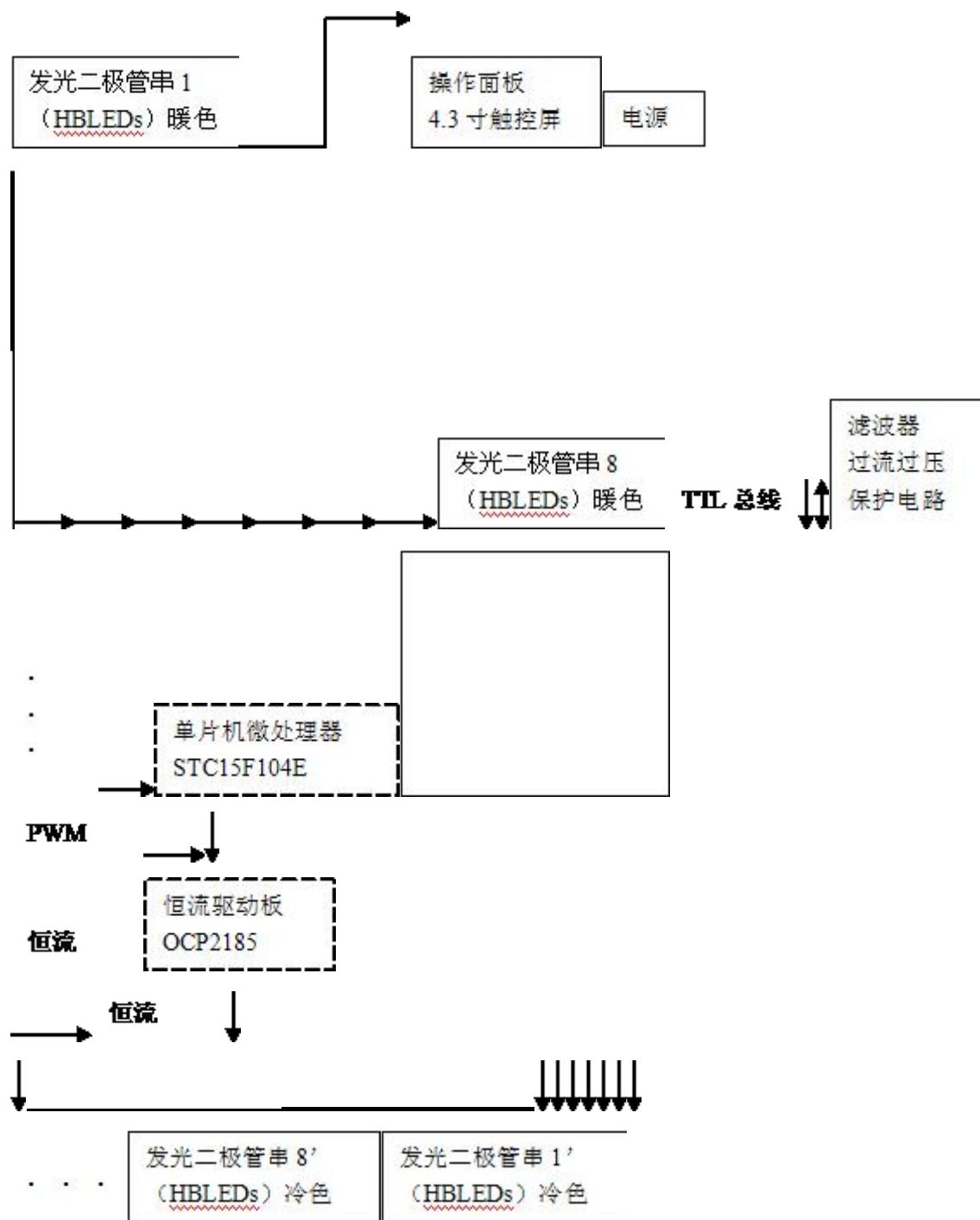


Figure 3 LED shadowless lamp electrical schematic (mother lamp, child lamp is the same).

The parent and sub-lights each have a 4.3-inch touch screen as the operator panel, using a low-power 32-bit high-speed ARM chip solution, ARM920T core, 400MHz main frequency, system memory is SDRAM 64MB, NAND FLASH 128M, group 4.3 inch high-definition true color digital screen, four-wire resistive touch, precise and convenient, real-time, good, Multitasking is supported and is perfectly functional when used with MCU controllers such as serial port and microcontroller.

1. 2 Drive plate

The drive plate is the core of the entire shadowless lamp controller and consists of 16 MCU STC15F104E and 32 OCP2185 constant current regulated circuits, as well as TTL communication circuits.

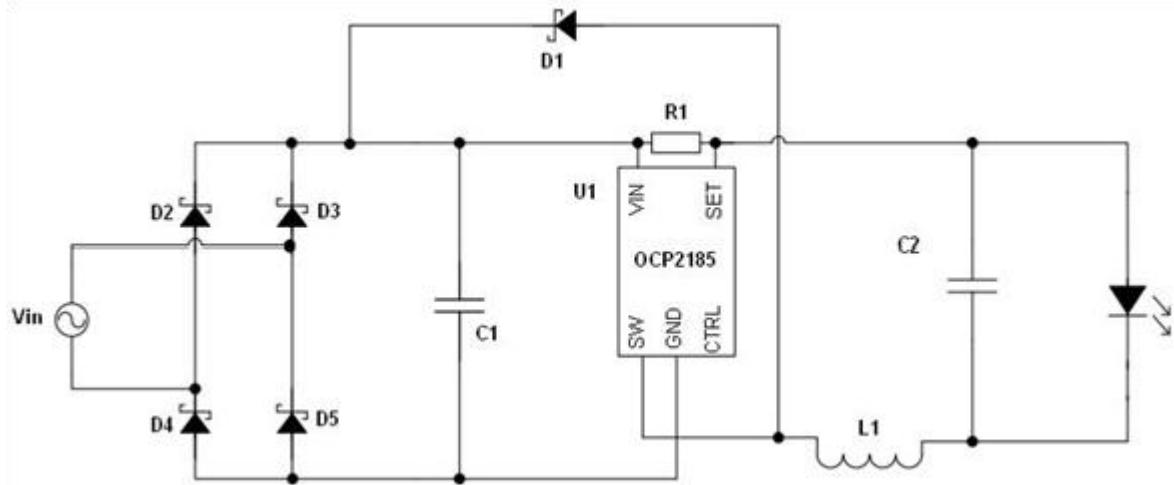
The STC15F104E is a low-power MCU produced by Acer Technology with a supply voltage of 5.5V - 3.8V, which operates at low power and is suitable for many high-integration, low-cost applications that meet a wide range of performance requirements. All 175 degrees C eight hours of high temperature baking, high-quality manufacturing guarantee.

The STC15F100 Series microcontroller is a single clock/machine cycle (1T) produced by STC, a new generation of 8051 microcontrollers with high speed/high reliability/low power consumption/ultra-immunity, with 8th generation encryption, ultra-encryption and instruction code fully compatible with the traditional 8051, but

6-12 times faster. Internally integrated high-precision R/C clock, $\pm 1\%$ warm, at room temperature, 5s,5MHz to 35MHz wide range set, completely eliminating external expensive crystals. The internal high-reliability reset, with an optional reset threshold voltage of level 8, completely eliminates the need for an external reset circuit.

The OCP2185 is a buck LED constant current driver that drives up to 8 1W white LEDs, the OCP2185 input voltage can range from 6V to 30V, the output current can be adjusted by an external sampling resistance, and the output current can reach up to 1A. The OCP2185 operates at high operating frequencies up to 1MHz, greatly saving the size of peripherals and PCB board area, and the OCP2185 supports analog dimming and PWM dimming modes. OCP2185 is mainly used in MR16 cups, on-board LED lights and other LED lighting. OCP2185 chip features: 1, up to 1A output drive current; 2, high constant current accuracy; 3, up to 98% system efficiency; 4, integration 0.25Ω internal high-voltage MOS; 5, up to 1MHz switch operating frequency; 6, with analog / PWM dimming function.

With the OCP2185 chip constant current, the current fluctuation is small and can fully meet the surgical light sensing requirements.



Typical application circuit for Figure 4 OCP2185

【Key technical indicators and reference data】

1. Illumination: $\geq 160,000 \text{ LUX}$ / $\geq 120,000 \text{ LUX}$ /
2. Color temperature (adjustable): $4500\text{K} \pm 200\text{K}$ $4000\text{K} \pm 200\text{K}$
3. Display index: 96
4. Lighting depth: 1150mm / 1150mm
5. Spot diameter: 200-350mm
6. Lamp rating: 3.2V / 1W
7. LED bulb life: $\geq 30000\text{h}$
8. Supply voltage: AC110-240V 50/60HZ
9. Mounting height: 2750-3100mm

【Packaging identification, label patterns】



【Installation and commissioning】

I、mobile installation:

YTLED500Y, 200Y surgical shadowless lamp as a mobile installation, see the installation diagram, respectively, the parts are connected, tighten the fixed screws, line connection to press the "red" color to "red" color, other corresponding colors or "marks" corresponding to the connection.

II、fixed (hanging) installation:

1, installed on the ceiling, requires that the ceiling concrete pre-buried four M12×200mm gong bolts, exposing the ceiling 30mm (diameter 240 circumference, 360 degrees four equidistant), in order to install fixed discs and fixed seats. It can also be used not less than 20mm diameter round steel gong bolt hanging fixed disc.

2, installed on the beam, can do a diameter is not less than 320mm, thickness is not less than 6mm steel disc, in diameter 240mm circumference, 360 degrees four equidistant, drill diameter 12.5 holes four, on both sides of the plate welding a piece is not less than 150 ×90mm, thickness is not less than 5mm steel plate, The width of the beam is clamped to the beam and secured with the M10 expansion bolt in order to install the shadowless lamp base.

3, line connection:

Power transformer and power supply line 220V, 50HZ two phases are connected, the upper part of the base has a set of two-color lines, to be connected to the power output of the positive and negative line (red positive pole); (red to red, other colors are connected).

III、the operation shadowless lamp debugging:

1, after installation, such as the cross-arm tube or straight lamp turn tight or loose, can be used to the side 6mm inside the hex wrench adjustment of the corresponding brake screws.

2, the lamp body around the straight lamp rotation tight or loose, can be used to the side 4mm hex wrench adjustment of the loose tension.

3, the lamp body around the Y-type tube flip can not be positioned, with the side 4mm of the inner hex wrench to adjust the tightness of the 15.

4, Y-type tube left and right rotation can not be positioned, you can use the side 4mm of the inner hex wrench to adjust the tightness of the 6.

5, Y-type tube up and down to move loose or tight, can open the position of the spring adjustment.

6, adjust the parts of the clockwise tightening, counterclockwise loosening, so that the parts to achieve rotation flexibility, and can be positioned in a certain position.

【Other instructions】

1, the user in compliance with the storage and use of the premise, from the date of the factory, within one year can not work properly, the manufacturing plant should be free of charge for the user repair or replacement parts.

2, such as due to the business department or user transportation and improper use of damage, is not covered by the free warranty, the Company only charges a cost fee, and provide life-long repair and service.

3, please receive the product within one month: will fill out the product acceptance receipt and "product quality questionnaire" mailed to the company or submitted to the installer to bring back. If this information is not received, the Company shall not be liable for any future failures.

Shadowless lamp installation

1, hanging on the roof: first of all, the disk to remove, on the roof to expand five holes, four 16 screws fixed on the disk with expansion screws fixed under the top of the five holes can be, the shadowless lamp base hanging on four screws, with the level for leveling, otherwise will cause the installation of lamp head fixed, drift phenomenon.

Hanging on the girder: After first removing the disc, weld the four fixing plates distributed according to the width of the slug. After welding, weld the hole distance (four holes on one side) on the beam and secure the four wire bars to the disc. Then clamp the welded disc on the beam and tighten it with expansion screws, and then hang the shadowless lamp base on the four screws. At this time also want to do horizontal processing, otherwise it can not be fixed, the phenomenon of drift. Install the balance arm: Remove the four flat-head screws and plug in the plug-in (be sure to plug in firmly). Direction do not insert the reverse, the top wire of the two screws must be consistent with the two holes on the arm, otherwise the

positioning is not accurate. If the arm drifts alone, adjust the screws here (there is a loose mark here).

The other four screws on the balance arm are removed and the lamp head is installed, in order of installation: the top wire on the balance arm must be aligned to one side of the elbow, otherwise it will cause the positioning direction is incorrect. After installing the lamp head, press the head slightly down a little to remove the positioning screw (marked here).

After installing the lamp head to remove the sticker paper, two light bulbs installed on the lamp holder, and then put the torch into the adhesive position, with three screws to imprison it.

Power-on experiment: There is a transformer at the first step of installation, with two reserved wires attached to the 220 volt voltage above, i.e. on the red wire on L(L is the line of fire), on the blue or green wire on the N(N is zero). The two red lines that come out of the base are V-plus, blue-line or green-line V-. The power-up experiment is available after confirmation. When the switch on the circuit board is normally turned on, both the P and M indicators are on at the same time. At this point there is a light in the middle of the light bulb in the headlights. If the B light comes on, the main bulb burns out, the spare bulb is started and the bulb needs to be replaced (the light is not focused at this time).

Shadowless lamp consists of lamp head, balancer, base three pieces.

- I、 The lamp head includes a handle box (plastic), circuit board, torch, light bulb, disinfection handle (plastic).
- II、 The balancer includes a six-dimensional, spring barrel, spring, and crank arm cover (plastic).
- III、 The base includes the arm, chassis, electrical transmission, transformer, large shield (plastic).

The overall drift of the shadowless lamp is caused by the lack of horizontal handling at installation. Adjust the four screws to level after the damping screws are released. Then tighten the damping screws appropriately.

When the balancer drifts, tighten the damping screws (with a loose mark) at the connection between the lower balancer and the base. If the lamp head automatically droops to open the curved arm cover above the lamp head, with an adjustment groove inside, the pressure screws need to be adjusted with a 6 adjustment lever until appropriate (marked here).

When the lamp head drifts left and right, tighten the damping screws at the head and balancer connection. If the lamp head can not be fixed, tighten the handle box above the screws near both sides, do not move in the middle.

Shadowless light does not light the treatment: turn on the power supply, circuit board without any reaction, first determine whether there is electricity, open the large shield, see if the light on the transformer if not on to see if there is electricity. If there is electricity and then disconnect the load (V-, V-), if not lit after disconnecting, the transformer is bad. If the light is on and then check if the plug-in is in poor contact, plug it back in.

Turn on the power led, the light goes on but the light bulb does not, see if the bulb is installed, and the light goes on at the same time as the P and B lights.

If the light bulb circuit board light is on after installation, the P and M lights

are on at the same time, the bulb does not open, check whether the banana plug is in good contact, and vice versa the circuit board is bad.