

标准光源箱（对色灯箱）
Color Assessment Cabinet
使用说明书
OPERATION MANUAL

请在使用本产品前阅读此说明书，并将其保存好以备将来参考。
Please read this manual before operating this equipment
After you finish reading this manual, store it in a safe place for future reference.

标准光源对色灯箱介绍

标准光源对色灯箱广泛应用在纺织、印刷、塑胶、颜料、油漆、油墨、摄影等领域，用于准确校对货品的颜色偏差。

因为不同光源拥有不同的辐射能量，在照射到物品上时，会显现不同的颜色。工业生产中的颜色管理，品检员虽然已仔细地对比过货品的颜色，但因为环境光源不标准或与客商所使用的光源不一致，不同光线下所看到的颜色各异，货品色差判定不准确。客商验货时会因为色差超出标准范围而投诉，甚至退货，从而严重影响了公司商誉。

要有效解决上述问题，最有用的方法就是在检定货品的颜色时，必须在相同的光源及可控制的条件下进行。例如国际通用标准中常采用人工日光—D65作为评定货品颜色的标准光源。

特别是夜班时间，使用标准光源检定货品颜色偏差尤其重要。灯箱内除提供D65光源外，同时还提供 TL84、CWF、UV、F、A、D75、U35、U30等光源，具备测试同色异谱效应的功能。

标准光源对色灯箱性能

1. 根据用户的需求，可为用户提供国际照明会(CIE)所认可的各种标准光源,符合所有主要的视觉评价，包括AS, ASTM, BSI, DIN和ISO国际标准。

2. 光源的照度范围为 750至3200勒克司 (Luxes)。

3. 光源的背景颜色为吸光型中灰色 (Neutral Grey)。

4. 具备测试同色异谱效应的功能。

5. 灯箱采用微电脑控制模块快速切换的方式，可快速、准确对比货品在不同光源下的颜色差异。

6. 准确记录每种光源的使用时间和开关次数。

标准光源灯箱工作原理

标准光源灯箱工作原理示意（见附图1）

灯箱安装、使用注意事项

在安装、使用灯箱之前应仔细阅读使用说明书，避免因方法不当对灯箱造成损坏或导致产生安全隐患。

注意事项：

1. 注意使用合适的电源，在使用前查看灯箱背面的电源标签。

2. 放置灯箱时应确保每个灯箱之间或灯箱与墙壁之间的最小间距20cm。确保灯箱与易燃物和可燃物之间保留安全距离。

3. 灯箱不能在有爆炸性危险的环境空间内使用。

4. 注意不要将灯箱放置在潮湿有水及水管和消防水洒附近的位置，应保持周围环境的干燥。

5. 检验含有油墨、粉料、腐蚀性和尖锐物品放入灯箱内时，应避免对灯箱表面涂层造成污染和损坏。

6. 对灯箱进行维护保养及更换灯管时，应切断主电源。

电气参数

电源接入：AC 220~240V , 50/60Hz 功率：小于300W。

箱体安装方法

1. 将背板和底板用螺丝安装好（如图1）。

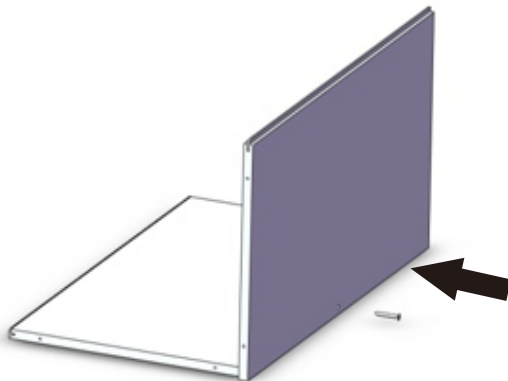


图1安装背板

2. 将侧板用螺丝安装好（如图2）。

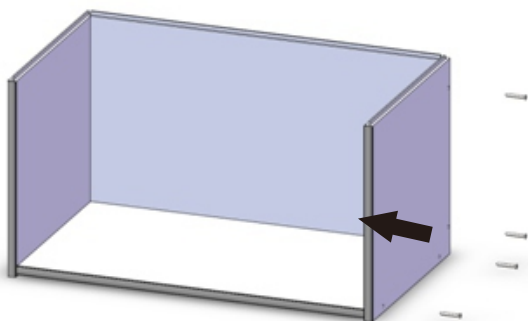


图2安装侧板

3. 将光源箱放入安装好的箱体上，对正好卡槽（如图3）。

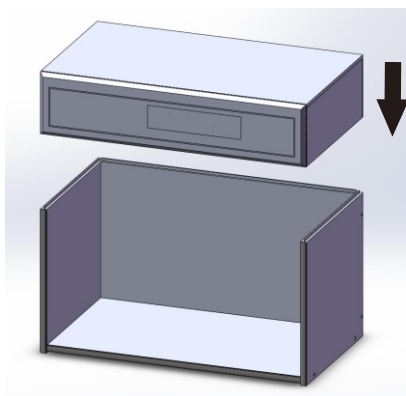


图3安装光源箱

灯箱操作使用说明

1. 将电源线接入市电电源（注意市电电源必须与灯箱标示的输入电源相符）。此时显示屏会点亮显示LOGO，提示电源已接通。

2. 按ON/OFF开关键后，指示红灯点亮，显示屏显示灯箱已使用的总次数和总时间（如图4）。图4显示该灯箱总共开机3次，共使用了2小时50分钟。

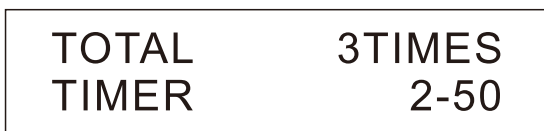


图4总开机次数和使用时间显示

3. 再按任意一个光源开关键, 相对应的指示红灯点亮, 同时该光源灯管点亮, 显示屏显示相对应的灯管已使用的次数和时间。如按D65键, D65光源点亮 (如图5), 显示屏显示D65灯管已使用5次共2小时50分钟。



图5 D65光源开机次数和使用时间显示

其它光源灯管同样操作。若需同时开启两种或多种光源, 只需同时按下两键或多键即可。

4. 将要检测物品放在灯箱底板中间, 需要比较两件或两件以上物品的颜色时, 应并排摆放在灯箱尽量靠中间位置进行比对。

5. 光源从零度(垂直)入射角照在样品上, 观察者从45度观察样品, (如图6)所示, 光源从垂直入射角照射到被检测物品上, 观察者从45° 观察。

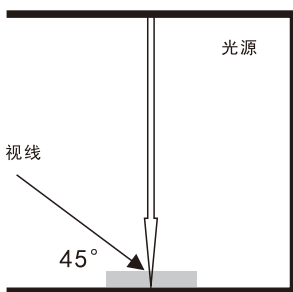


图6观察方法

6. 检测完毕，按一下ON/OFF键关机，同时指示红灯熄灭。下班时间不使用时要将电源关闭，长期不使用时要将电源插头拔出。

7. 更换新灯管，按照灯管座处的标示进行安装，灯管要对号装入灯管座处。更换新灯管后，可将原来灯管的使用时间记录清零（即从零重新开始计时），具体方法是先点亮更换好的新灯管，再用小螺丝刀伸入到CLR中心圆孔，按下该键4—5秒即可（其它没有点亮的灯管计时不会被清零）。

维护保养

1. 灯箱的免费保养期为壹年（人为损坏及灯管老化不在免费保修范围内）。
2. 对灯箱进行维护时，应关闭主电源，拔掉交流电线。
3. 如灯箱壁板、底板、反光板上沾有灰尘或存有手印、油印等污点、污渍时，可用干净白色软布蘸点清水或含中性清洁剂的水轻轻摩擦去除污物，并自然风干。严禁使用硬物刮刮及化学溶剂除污，以免破坏灯箱壁的表面涂层。
4. 如灯箱表面涂层破损或变色则应更换。

标准光源对色灯箱提示信息

1. 如何延长灯管的使用寿命？

灯管的寿命周期主要由累积使用时间和开启次数决定。如每天使用时间较长及需要频繁开启、切换的情况，灯管的寿命周期会缩短一些。在一小时内，需要多次使用时，请不要关闭灯箱又反复开启，因为灯管启动点亮一次相当于连续使用一小时左右，如果较长时间不使用请及时关闭电源。在不必要的情况下，尽量避免多种光源间的反复切换，以延长灯管的有效使用寿命。

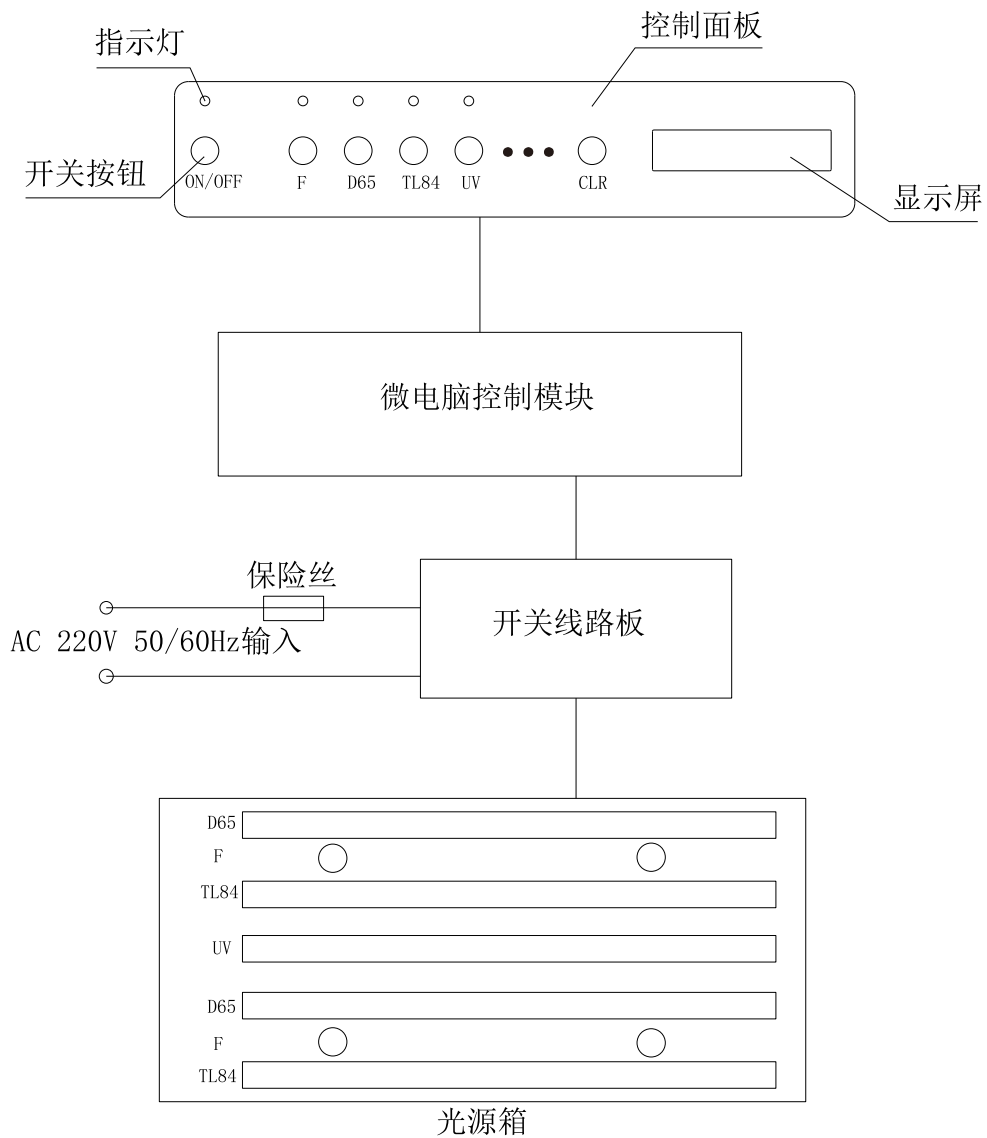
灯管使用超时或两端发黑，应及时更换同样规格的新灯管，否则会影响检测的准确性。

2. 如何购买特殊光源灯管？

标准光源箱内使用的灯管、灯泡，都是经过标准认证、实验室专用的特殊光源灯管、灯泡，不同于普通民用光源灯管、灯泡。所以需要到专业经销商处购买。本公司常年提供各种标准原配件及各种特殊光源灯管、灯泡，有D75、D65、D50、CWF、TL84、U35、U30、TL83、A、F、HOR等国际标准光源原装进口配件。

附件1

标准光源灯箱工作原理示意



Instruction of Color Assessment Cabinet

Color assessment cabinet is widely used in textile, printing, plastics, pigments, paints, ink, photography and other fields to accurately check the color deviation of goods.

Since different light source has different radiant energy, they will show different colors when they irradiate objects. In the color management of industrial production, although the inspectors have carefully compared the colours of the goods, the judgement of the colour difference of the goods is inaccurate because the ambient light source is not standard or inconsistent with the light source used by the merchants. Customers will complain or even return the goods when they check the chromatic aberration of the goods exceeding the standard range, which can seriously affect the goodwill of the company.

To effectively solve the above problems, the most useful method is to check the color of the goods under the same light source and controlled conditions. For example, the artificial daylight D65 is often used as the standard light source to evaluate the color of goods in the international general standards.

Especially in night shift time, it is particularly important to use standard light source to verify the color deviation of goods. In addition to providing D65 light source, the equipment also provides TL84, CWF, UV, F, A and other light sources, and also have the function of testing metamerism.

Performance of Color Assessment Cabinet

1. According to the user's needs, we can provide all kinds of standard light sources approved by CIE, which meet all the major visual evaluation standards, including AS, ASTM, BSI, DIN and ISO.
2. The illumination of the light source ranges from 750 to 3200 Luxes.
3. The background color of cabinet is absorbing neutral grey.
4. Can testing the metamerism.
5. The equipment adopts the way of fast switching of micro-computer control module, which can quickly and accurately compare the color difference of goods under different light sources.
6. Accurately record the use time and times of each light source.

Working Principle of Color Assessment Cabinet

The schematic work principle of color assessment cabinet(see Fig. 1 attached)

Attentions for Installation and Usage

Before installing and using the light box, carefully read the instructions to avoid damage or potential safety hazards caused by improper methods.

Notes:

1. Pay attention to the proper power supply, and check the power label on the back of the light box before using it.
2. When placing the color assessment cabinet, users need to make sure that the minimum distance between each cabinets or between cabinets and walls is 20 cm. Ensure safe distance between cabinet and combustibles and combustibles.
3. This machine should not be used in environments with explosive hazards.
4. Be careful not to place the machine near damp water and water pipes and fire sprinklers. Keep the surrounding environment dry.
5. When inspecting articles containing ink, powder, corrosiveness and sharp substances into the light box, users need to avoid pollution and damage to the coating on the surface of the color assessment cabinet.
6. The main power supply should be cut off, When maintaining the machine or replacing the lamps.

Electrical Parameters

Power access: AC 220 ~ 240V, 50/60Hz Power: less than 300W

Installation Method of Box

1. Install the back and bottom boards with screws (Fig. 1)

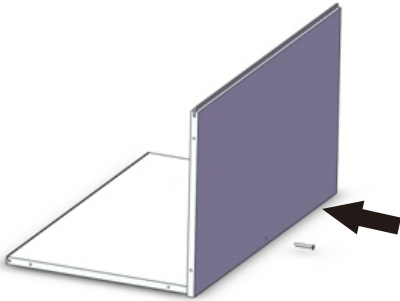


Fig. 1 Installation backboard

2. Install sideboard with screw (Fig. 2)

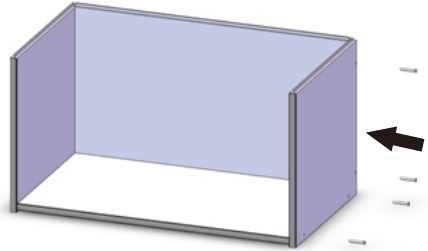


Fig 2 Installing sideboard

3. Put the upper cover on the mounted box and clip the slot exactly.(Fig. 3)

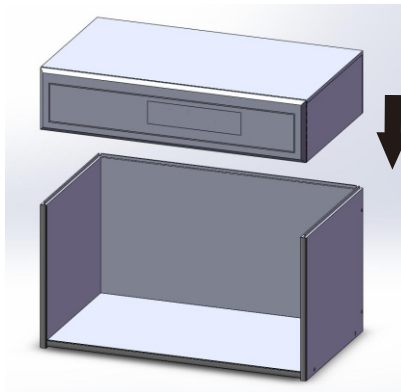


Fig. 3 Install upper cover

Operational instructions for the color assessment cabinet

1. Connect the power line to the city power supply (note that the city power supply must match the input power indicated by machine). At this time, the display screen will light up LOGO, indicating that the power supply has been switched on.
2. After pressing ON/OFF switch key, the red light is lit and the display screen shows the total number of times and total time that the light box has been used (Figure 4).

Figure 4 shows that the light box has been powered on three times and used for 2 hours and 50 minutes.

TOTAL TIMER	3TIMES 2-50
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Fig. 4 Total usage times and usage time

3. Press any light source switch key, and the corresponding indicator red light is lit. At the same time, the light tube is lit, and the display screen shows the number and time of the corresponding light source has been used. If the D65 key is pressed, the D65 light source is lit (Fig. 5). The display shows that the D65 light tube has been used five times for 2 hours and 50 minutes.

D65 TIMER	5TIMES 2-50
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Fig.5 D65 light source usage times and usage time

Other light source operate as the same way. If two or more light sources need to be opened at the same time, just press two or more keys at the same time.

4. When we need to compare the colors of two or more items, we should put them side by side in the middle of the light box as far as possible.

5. The observation angle should be 90 degree light source and 45 degree line of sight. As shown in Figure (6), the light source irradiates the detected object from the vertical incidence angle, and the observer observes from 45 degree.

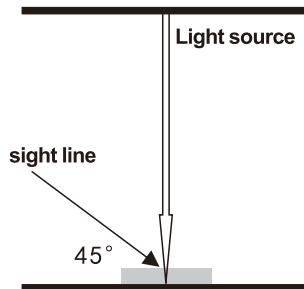


Fig.6 Observation Method

6. After testing, press ON/OFF key to shut down and indicator red lights out. Turn off the power supply at off-duty hours and pull out the power plug when it is not used for long time.
7. Replace the new lamp tube and install it according to the sign at the lamp holder. The lamp tube should be symmetrically mounted at the lamp holder. After replacing the new lamp tube, the time record of the original lamp tube can be cleared (i.e. starting from zero again). The specific method is to first light the replaced new lamp tube, then extend it into the central hole of CLR with a small screwdriver and press the key for 4-5 seconds (other unlighted lamp tube timing will not be cleared).

Maintenance

1. The free maintenance period of the machine is one year (man-made damage and aging of the lamp tube are not covered by the free warranty).
2. When maintaining the color assessment cabinet, the main power supply should be turned off and the AC line should be unplugged.
3. If there are dirt or fingerprints or mimeographs on the wallboard, floor and reflector of light box, the dirt can be removed by cleaning white soft cloth with cleaning water or water containing neutral detergent, and then dried naturally. Strictly prohibit the use of hard scraping and chemical solvent decontamination, so as not to damage the surface coating of machine.
4. If the surface coating of the light box is damaged or discolored, it should be replaced.

Tips for the Color Assessment Cabinet

1. How to prolong the service life of the lamp?

The life cycle of the lamp tube is mainly determined by the cumulative usage time and usage times. The life cycle of the lamp will be shortened if the lamp is used for a long time every day or be switched on and off frequently. Do not turn off and on the light box again and again in an hour when users need to be used many times. Because the lamp start-up one time is equivalent to continuous use for about one hour. If it is not used for a long time, please turn off the power in time. Under unnecessary circumstances, try to avoid repeated switching between multiple light sources, in order to prolong the effective life of the lamp.

When the lamp is used overtime or blackened at both ends, users need to replace the new lamp with the same specifications in time, otherwise the accuracy of detection will be affected.

2.How to Buy Special Light Source Tubes?

The lamp tubes and bulbs used in the color assessment cabinet are all special light source tubes and bulbs which are certified by the standard and specially used in the laboratory. They are different from ordinary civil light source lamps and bulbs. So we need to buy from professional dealers. Our company provides all kinds of standard original parts of the machine and all kinds of special light source lamps and bulbs all year round, including D75、 D65、 D50、 CWF、 TL84、 U35、 U30、 TL83、 A、 F、 HOR and other international standard light source.

The schematic work principle of color assessment cabinet(see Fig. 1 attached)

