



## 快速使用教程

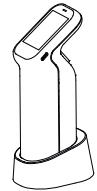
### 1.扫描二维码获取手机App及操作说明



### 2.开机及校准



开机

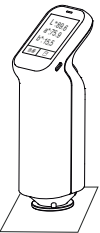


将仪器放到校准底座进行白校准

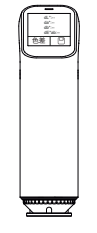


将仪器对准空气进行黑校准

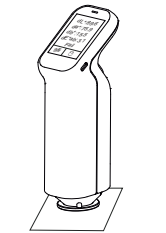
### 3.如何测色差



测标准

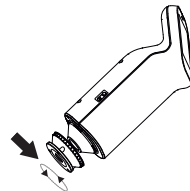


切换到色差测量界面

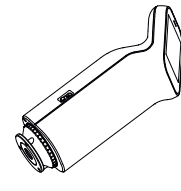


测样品,得出色差

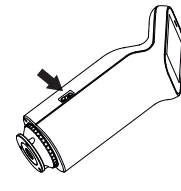
### 4.口径切换



旋转并取下测量口径

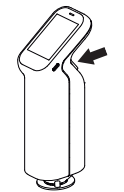


将测量口径旋转扣合



根据口径选择对应的MAV或SAV模式

### 5.关机



长按3秒

## 基础参数

产品型号: CS-422  
 测量结构: D/8,SCI/SCE(漫射照明/8°方向接收,包含镜面反射/去除镜面反射)  
 符合标准: 符合标准CIE No.15,GB/T 3978,GB 2893 GB/T 18833,ISO7724-1,ASTM E1164,DIN5033 Teil7  
 分光方式: 集成光学器件  
 感 应 器: CMOS感应器  
 测量指标: 光谱反射率

CIE-Lab,CIE-LCh,HunterLab,CIE-Luv,XYZ,Yxy,RGB  
 色差( $\Delta E^*ab, \Delta E^*cmc, \Delta E^*94, \Delta E^*00$ )  
 白度(ASTM E313-00,ASTM E313-73,CIE/ISO AATCC,Hunter,TaubeBerger,Stensby,R457)  
 黄度(ASTM D1925,ASTM E313-00,ASTM E313-73)  
 黑度(My,dM),沾色牢度,变色牢度,Tint(ASTM E313-00)  
 色密度CMYK(A,T,E,M),同色异谱指数MilM  
 孟塞尔,遮盖力,力份(染料强度,着色力)

积分球直径: 40mm  
 照明光源: LED(全波段均衡LED光源)+UV  
 测量/照明口径:  $\Phi 8\text{mm}/\Phi 11\text{mm}/\Phi 4\text{mm}/\Phi 6\text{mm}$   
 波长间隔: 10nm  
 波长范围: 400-700nm  
 反射率测定范围: 0-200%  
 反射率分辨率: 0.01%  
 测量精度: 0.01  
 测量稳定性: 色度值: 标准偏差 $\Delta E^*ab \leq 0.03$   
 平均值 $\Delta E^*ab \leq 0.04$ ;最大值 $\Delta E^*ab \leq 0.06$   
 (白板校准后以5秒间隔测量白板30次)  
 $\Delta E^*ab \leq 0.4$  (BCRA II 系列12块色砖测量平均值)

台 间 差:  $\Delta E^*ab \leq 0.4$  (BCRA II 系列12块色砖测量平均值)  
 测量时间: 约1秒  
 接 口: USB, 蓝牙  
 光源条件: A,B,C,D50,D55,D65,D75,F1,F2,F3,F4,F5,F6,F7,F8,F9,F10  
 F11,F12,CWF,U30,U35,DLF,NBF,TL83,TL84

视 场 角:  $2^\circ, 10^\circ$   
 屏 幕: IPS全彩屏幕,2.4英寸  
 电池容量: 单次充电可连续测量8000次,3.7V/3000mAh  
 光源寿命: 10年100万次  
 语 言: 简体中文,英语  
 校 准: 自动校准  
 软件支持: Android,iOS,Windows  
 摄像头取景定位: 有  
 重 量: 约280g  
 体 积: 180mm\*60mm\*51mm  
 是否能过计量: 可过计量  
 存 储: App海量存储

\*参数如有修改,恕不另行通知

## 保修说明

本产品售后服务严格依据《中华人民共和国消费者权益保护法》、《中华人民共和国产品质量法》实行售后三包服务,服务内容如下:

- 1、自您签收日起7日内,本产品出现《产品性能故障表》所列性能故障的情况,经由本司售后服务中心检测确定,可免费享受退货或换货服务;
- 2、自您签收日起8-15日内,本产品出现《产品性能故障表》所列性能故障的情况,经由本司售后服务中心检测确定,可免费享受换货或维修服务;
- 3、自您签收日起36个月内,本产品出现《产品性能故障表》所列性能故障的情况,经由本司售后服务中心检测确定,可免费享受维修服务。

### 提示信息

因运输过程中需用包装箱保证产品运输安全,建议自签收日起至少保留包装箱30天。

### 非保修条例

- 1、未经授权的维修、误用、碰撞、疏忽、滥用、进液、事故、改动、使用非本产品配件,或撕毁涂改标签、防伪标记;
- 2、已超过三包有效期;
- 3、因不可抗力造成的破坏;
- 4、不符合《产品性能故障表》所列性能故障的情况;
- 5、因人为原因导致非本产品及其配件产生《产品性能故障表》所列性能故障。

### 联系方式

制 造 商: 杭州彩谱科技有限公司  
 制造商地址: 浙江省杭州市江干区文渊北路166号  
 客服热线: 4007-7272-81  
 官方网址: www.hzcaipu.com

### 警告

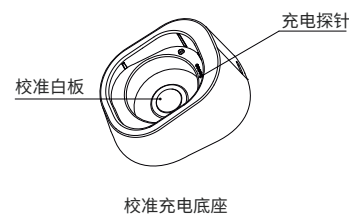
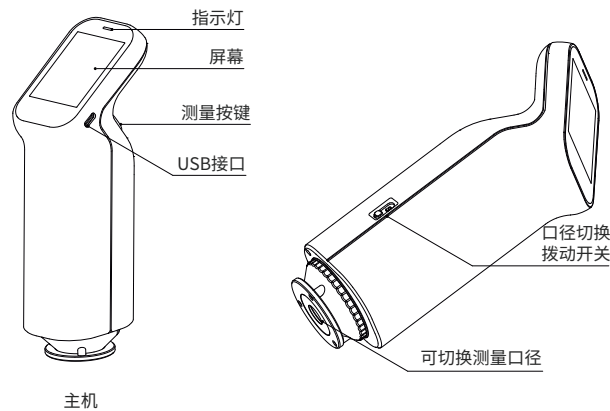
- 请勿尝试拆卸或更换仪器内部零件,如需服务请联系代理商或官方客服。
- 请勿将仪器放置于热源或直接暴露在炉火旁。
- 若任何液体不小心进入仪器,请立即关闭仪器电源。
- 本产品及内部零件,如被儿童误食可能导致窒息等危险。

### 性能故障表

名称	性能故障
分光色差仪 CS-422	1、电源指示灯不亮(电池没电除外); 2、仪器开关卡滞,不能正常开关; 3、仪器显示器无法正常显示; 4、测量光源不亮; 5、蓝牙无法连接。

## 产品介绍

使用产品前请仔细阅读本说明书,并妥善保管



## 分光色差仪CS-422 使用说明书



## Quick Start

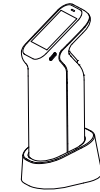
### 1.Scan QR code to get mobile App



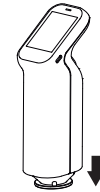
### 2.Power on Calibration



Power on



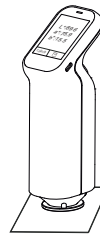
Place the instrument on the calibration base for white calibration.



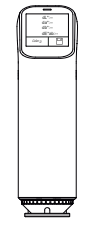
Measure air for black calibration

1 meter above the ground

### 3.How to measure color difference



Measure Target

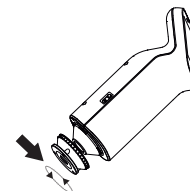


Enter into color difference measurement interface

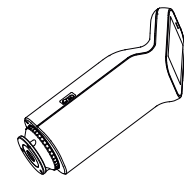


Measure sample to get the color difference

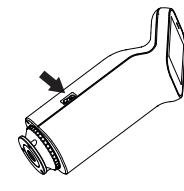
### 4.Change Test Aperture



Twist and take off the aperture

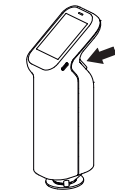


Twist to install the new aperture



Choose MAV or SAV according to the aperture size

### 5.Power off



Long press 3s

## Parameters

Product Name:	CS-422
GeoMetry and Angle:	d/8 (diffused illumination,8 degree viewing) SCI (specular component included) +SCE (specular component excluded)
Standards compliant:	Conform to standard CIE No.15, GB/T 3978, GB 2 GB/T 18833,ISO7724-1,ASTM E1164,DIN5033 Teil7
Spectroscopic method:	Integrated Optical Component
Sensor:	CMOS sensor
Color Value:	Reflectance CIE-Lab,CIE-LCh,HunterLab,CIE-Luv,XYZ,Yxy,RGB ColorDifference( $\Delta E^*ab, \Delta E^*cmc, \Delta E^*94, \Delta E^*00$ ) WI(ASTM E313-00,ASTM E313-73,CIE/ISO AATCC,Hunter, TaubeBerger,Stensby,R457),YI(ASTM D1925 ASTM E313-00,ASTM E313-73),Blackness (My,dM) ,Color Fastness Tint(ASTM E313-00),Color Density (CMYK(A,T,E,M)) ,Milm Munsell,Opacity,ColorStrength
Integrating sphere diameter:	40mm
Lighting source:	LED(Full band balanced LED light source)
Measurement Area/ Aperture Size:	$\Phi 8\text{mm}/\Phi 11\text{mm}; \Phi 4\text{mm}/\Phi 6\text{mm}$
Wavelength Interval:	10nm
Wavelength Range:	400-700nm
Reflectance measurement range:	200%
Reflectance resolution:	0.01%
Measurement accuracy:	0.01
Repeatability:	Chromaticity value: Standard deviation $\Delta E^*ab \leq 0.03$ Average : $dE^*ab \leq 0.04$ ;Max. : $dE^*ab \leq 0.06$ (when a white tile is measured 30 times at 5-seconds interval)
Inter-instrument agreement:	MAV/SCI, $\Delta E^*ab \leq 0.4$ (BCRA Series II ,average measurement of 12 tiles)
Measurement Time:	About 1S
Interface:	USB, Bluetooth
Illuminants:	A,B,C,D50,D55,D65,D75,F1,F2,F3,F4,F5,F6 F7,F8,F9,F10,F11,F12,CWF,U30,U35,DLF,NBF,TL83,TL84
Observer Angle:	2°,10°
Screen:	IPS full color screen, 2.4 inches
Battery:	Rechargeable, 8,000 times continuous tests,3.7V /3000mAh
Light Source Lifetime:	10 years,3 million tests
Language:	Chinese,English
Calibration:	Automatic
Software support:	Android/iOS/Windows
Camera:	Yes
Weight:	About 280g
Instrument Size:	180mm*60mm*51mm
Pass Metrology:	Yes
Storage:	App mass storage

\*Parameters are subject to change without notice

## Warranty

### Reminder

It is recommend that keep the packing box for at least 30 days as the packing box is required to ensure the safety of transportation.

### Non warranty regulations

- 1.Unauthorized repair,misuse,accident,modification,use of nonofficial accessories.
- 2.Instrument is out of warranty.
- 3.Damage caused by force.
- 4.Not the performance failure listed in the product performance failure table.
- 5.Performance failure caused by human factors.

### Contact

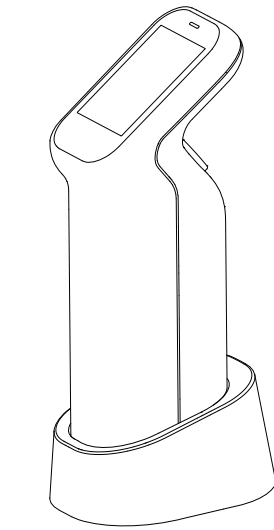
Manufacturer: Hangzhou CHNSpec Technology Co.,Ltd  
Address: No.166,Wenyuan North Road,Jiangan District  
Hangzhou,China  
Tel: +86 571 85888707  
Website: www.chnspec.com

## Warning

- .Do not attempt to disassemble or replace any part of the equipment. Please contact the agent or official customer service for after sales service.
- .Do not place the equipment near heat source or directly expose to the fire.
- .If any liquid enters the equipment,please power off the equipment immediately.
- .This product contains small parts.It may cause suffocation and other hazards,if swallowed by children.

## Product Performance Failure Table

Name	Performance failure
Spectral Colorimeter CS-422	<ol style="list-style-type: none"> <li>1.The equipment can't power on.</li> <li>2.The equipment's button can't work normally.</li> <li>3.Equipment screen fails to work normally.</li> <li>4.Equipment lamp fails to work normally.</li> <li>5.Bluetooth can't connect.</li> </ol>



## Spectral Colorimeter CS-422 Operation Instruction

### Product introduction

Please read this manual carefully before using the product.

