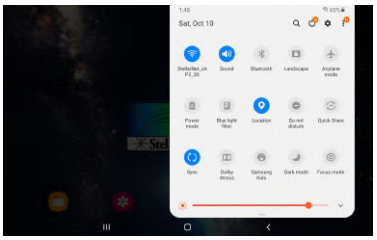
StellarRAD+Color User Guide

The StellarRAD+Color is a rugged, turn-key solution for portable color measurement. This handheld colorimeter is an easy to use research grade spectrometer for field testing of color for solids, liquids, and powders with no additional setup required.

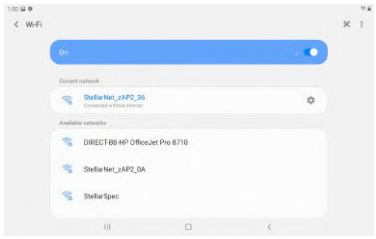
System Power & Spectrometer Engine Connection

The StellarRAD+Color Handheld Colorimeter system is delivered pre-installed. All a user must do is press the main system power button on the right side of the handheld case and the power button will illuminate. This turns on the main spectrometer engine and usually takes about 1 minute to initialize.



Next, the user must turn on the the system's Android tablet interface located on the top side of the touchscreen display. The tablet will turn on and allow normal operation of the Android system.

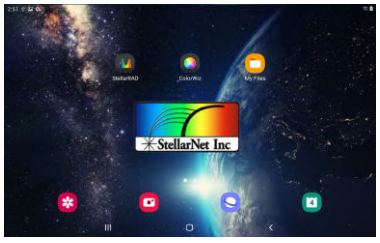
As soon as the spectrometer engine initializes, the Android tablet will automatically connect to its WiFi signal. You can verify or reconnect to your spectrometer engine at anytime by reviewing your WiFi settings.



WiFi network is StellarNet_zAP2_deviceID and password is always *stellarnet.* If connection is lost it could be because you (1) have added a stronger wireless network to your device and your system connects to it automatically or (2) your spectrometer engine's main battery supply is depleted and a re-charge or plug-in is required to reconnect. Forgetting other wireless networks allows your device to automatically connect.

Launching the ColorWiz Software

The handheld system's software, named ColorWiz, will be located on your system's home screen and can be launched by pressing the icon.

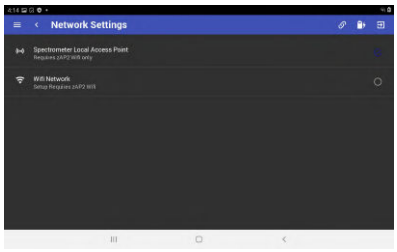


This is the same App found on Google Play and Apple Store for our WiFi enabled spectrometers; however, we have tailored the graphics for an 8" touchscreen and upgraded and added many new features, such as continuous mode, snapshot, multi-file review, & paint matching feature.

Acquire full spectrum analysis and research-grade colorimetry of solids, liquids, and powder samples! Capture basic and more advanced

color measurement parameters such as CIE L*a*b* and RGB. Also included are a variety of colorimetric analyses such as Chroma, Hue, Luminosity, SRM, Lovibond, and EBC. Easily save a dE color reference and calculate color differences. Save spectra, color metrics, and export as .TRM or .ABS text data files, screenshots, and/or PDF reports with all parameters listed.

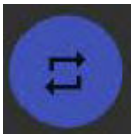
Software and Spectrometer Engine Connection



Once the ColorWiz software has been successfully launched the first step is to verify connection. Click the connection icon to visit the Network Settings menu option. There you can see your connection. For this device the ***Spectrometer Local Access Point*** should be automatically checked. If there is a problem with connection, you can uncheck and recheck this option to re-establish connection. If you can not connect either (1) you are connected to a different wireless network or (2) your spectrometer engine's main battery supply is depleted.

Main System Button Overview

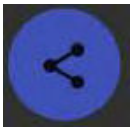
Capture - captures single spectrum



Continuous Mode Start/Stop - starts or stops captures spectra continuously

Expand Screen - expands screen to increase size of the spectral plot

Save Data - saves spectral data as .SSM, IRR, screenshot, and PDF report with all parameters listed to StellarRAD folder



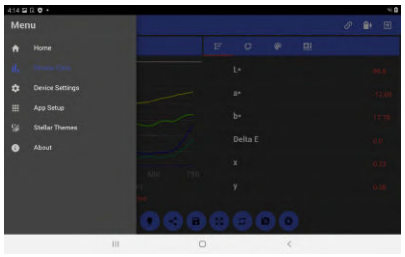
Share Data - saves spectral data as .SSM, IRR, screenshot, and PDF report with all parameters listed to StellarRAD folder. SSM/ IRR are .txt files that can be reviewed in SpectraWiz or Excel

Take Dark Spectrum - a dark spectrum should be taken after your Device Settings are changed and your system is optimized using the RS50 white reference spectrum. Turn off lamp and click

Take Light Spectrum - after a dark spectrum is taken the lamp should be turned on and the RS50 measured as your light spectrum

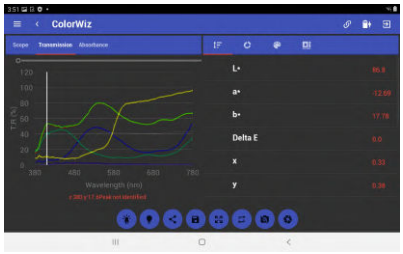
Snapshot - captures snapshot spectrum and displays as overlay for future measurements until the snapshot is turned off or removed by clicking the button again.

Main Menu



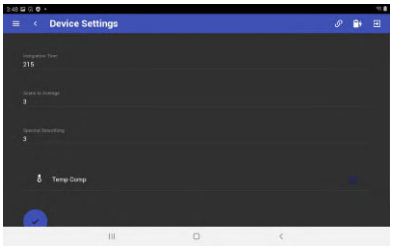
The left side menu is the ColorWiz's main menu containing Review Data, Device Settings, App Setup, Stellar Themes, and About Section.

Review Data



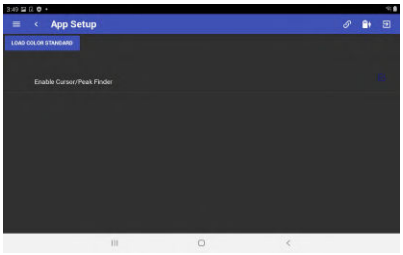
Selecting the Review Data menu item allows you to browse all of the existing saved spectra you have taken. All systems will also be delivered with DEMO spectral data. This option lists all .TRM files located in the ColorWiz folder. Select multiple files and use the check button to view overlaid spectra.

Device Settings



The Device Settings menu option allows you complete control of the main colorimeter parameters. These are integration or exposure time, scans to average, and pixel smoothing. You can also toggle on and off temperature compensation. Device setting parameters are saved to a system configuration file and are remembered when the software is re-opened. When using the system as a colorimeter once your settings are optimized you rarely have to change them.

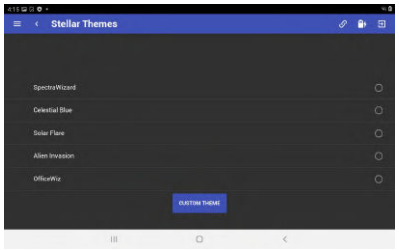
App Setup



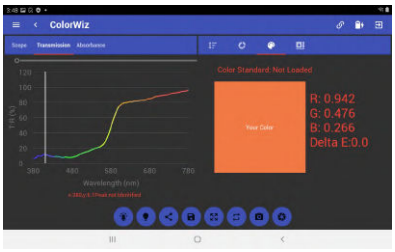
The App Setup menu option allows you to load or re-load a saved color as a color reference standard. Once you load a color reference standard, the a delta E value will appear on the color swatch screen. This delta E is the new measured value compared to the loaded color reference standard. All reference standards and saved files will be found in your ColorWiz directory

Stellar Themes

This menu option allows you to choose the color theme of the app! Choose from SpectraWizard purple, Celestial blue, Solar Flare red, Alien Invasion green, and Office Wiz white. Or design your own color to go along with your company or university.



Measurement Procedure (Color of Paint Sample)



1. Turn on the StellarRAD+Color's main spectrometer engine (right side power button) and tablet (top)
2. Turn on lamp source (left side button) and allow 2-3 minutes of system warm up
3. Launch the ColorWiz App
4. Verify software and spectrometer engine connection
5. Place the white RS50 white reflectance standard on the fixture and collect a spectrum
6. Verify your Device Settings are properly set and your white light reflectance spectrum is optimized. Typically, 225ms integration time, 5 sample averages, and 3 smoothing are best for most color measurements. These settings should be saved to your systems configuration file and automatically be set upon system initialization. If they are not, you can easily re-set the parameters and exit the software and they will automatically be updated.
7. With the RS50 on top of the reflectance fixture, turn off the lamp source and press the Take Dark Spectrum button
8. Turn the lamp source back on and click the Take Light Spectrum button
9. The ColorWiz App should automatically take you to Transmission mode. All colorimetric values should be updated with each measurement and displayed in the list tab. View CIE chart tab, and RGB color swatch tab for dE values.
10. Save Data as .SSM, .IRR, Screenshot, or PDF report with all parameters listed
11. Saved Data can be loaded as your Color Reference in the App Setup menu
12. Share via E-mail or transfer via USB. Note: if you share via email and change the WiFi network you will have to re-connect to the device in order to begin collecting spectral data again