QUICK GUIDE
V.3.1 06/2024

NIRONE ® Scanner
QUICK GUIDE

SPECTRAL ENGINES
MEMBER OF THE NYNOMIC GROUP

Table of Contents

What´s Included

Thank you for purchasing a NIRONE Scanner.

The package includes:

- NIRONE Scanner
- USB-C cable
- Calibration Puck
- Quick Guide

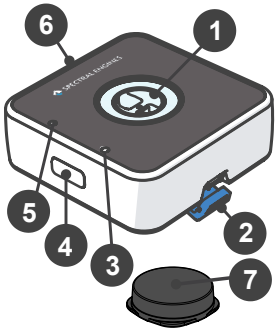
Software:

- NIRONE Scanner Mobile App
- NIRONE Scanner Web Portal

Important!

The intended use of NIRONE Scanner is to measure spectra from various materials. Do not use the device for anything other than its intended use.

Product Parts

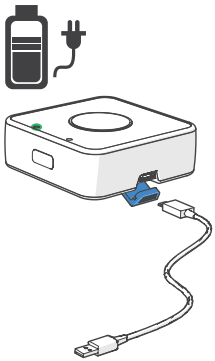


1. Sensor window
2. USB-C connector
3. LED indicator for Bluetooth / power
4. Pairing button
5. LED indicator battery level / charging
6. ON / OFF button
7. Calibration Puck

Getting Started

Charging

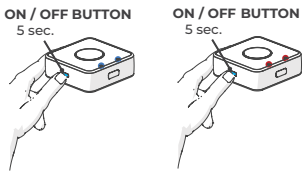
While charging, LED indicator for battery blinks green until battery is full. If battery is full, LED indicator is static green.



Switching ON/OFF

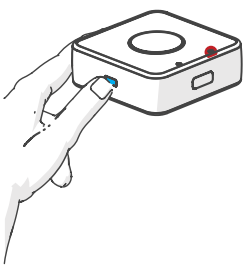
To switch the device on, press ON/OFF button until both leds flash blue. To switch off, press ON/OFF button until both leds flash red.

Your Scanner will automatically shut down after 15 minutes unused.



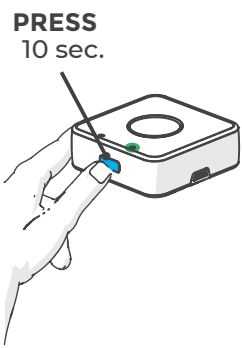
Get Ready to Pair

When Bluetooth LED blinks red, your Scanner is powered on and Bluetooth is disconnected.



Mobile App and Pairing

To start pairing login to NIRONE Scanner app and press pairing button on the device until LED indicator for Bluetooth turns green.



* All LED functions at page 11

Get the Mobile App

Download NIRONE Scanner App from App Store or Play Store by searching “Spectral Engines”.

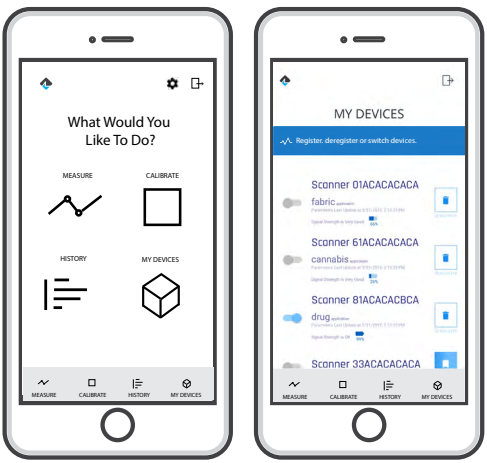
Sign in to the App

Contact your administrator for credentials.

Pair Your Mobile App and Device

After signing in the app, you have to pair your mobile app and device.

Check that Bluetooth is ON in your mobile device and allow the app to use your location. Note that the NIRONE Scanner mobile app requires an internet connection.



1. Go to “My Devices”.
2. Press the “Pairing” button from the device until the Bluetooth LED turns green.
3. Select your device from the list (tap the switch next to your device serial number to pair the device. The serial number is located on the bottom of the device).
4. OPTIONAL: Choose the application.

Measuring

Measuring samples with your NIRONE Scanner is easy and consists of few steps that must be followed carefully for accurate results.

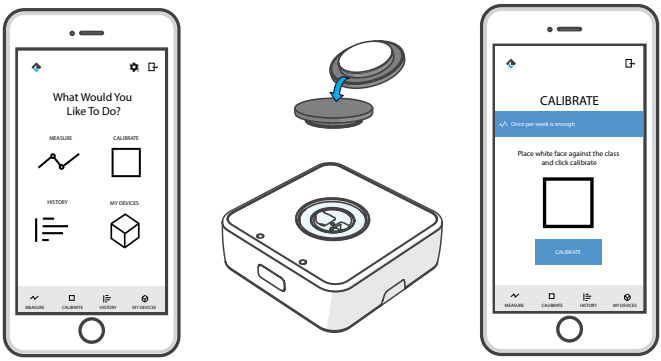
Cleaning

Make sure that the device sensor window is totally clean (an alcohol wipe works great, just let it dry before you start measuring).

Calibrating

Your NIRONE Scanner must first be calibrated before any measurements can be performed. This should be done every time you start new measurement series.

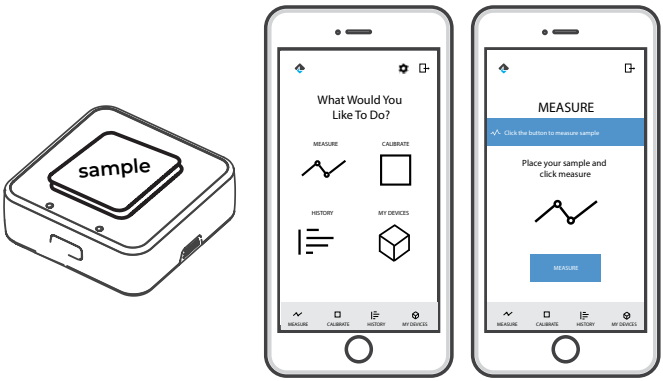
Be VERY careful with the calibration puck. DO NOT touch the white part of the calibration puck or let it get contamined or spill any liquids on it. If you do, discontinue use and contact your administrator.



1. Remove the protecting cap of calibration puck and place its WHITE part DOWN against the measurement window.
2. In the NIRONE Scanner mobile app, click “Calibrate” then “Calibrate”. After a few seconds the device will calibrate and you’re ready to go!

Measuring a Sample

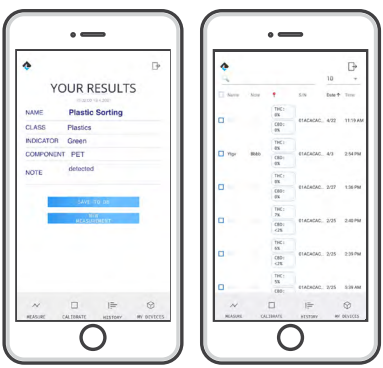
It is important that the sample covers the center of the sensor window. The sample may not be evenly mixed and measurement from different points may give different results.



1. Place the sample on the center of the sensor window.
2. In the NIRONE Scanner mobile app, click “Measure” then “Measure”.

Getting the Results

A couple seconds after pressing “Measure”, the NIRONE Scanner app will display the results. You can save the results or start a new measurement. All saved measurements will be available in the NIRONE Scanner app’s “History” page.



Safety Information

Please read these guidelines carefully. The device may only be operated within the specified limits! Not following them may be dangerous or against local laws and regulations.

When the user makes measurements, ensure that the sample covers the NIRONE Scanner light source completely. The lamp can emit light near the infrared range. Risk of dazzling.

The device may warm up during long uninterrupted use. Do not touch the device during long periods of use.

The device contains a glass window. This window can break, if the device is dropped on a hard surface or receives a substantial impact. If the glass breaks, do not touch the glass parts or attempt to remove the broken window from the device. Stop using the device. Please contact a distributor or Spectral Engines sales.

Your device and its accessories are not toys. They may contain small parts. Keep them out of reach of children.

Charge this rechargeable battery only with a USB-C 2.0 compatible charger. Output power of charger is maximum of 15 W.

The battery is not changeable by a user, please contact your authorized distributor or Spectral Engines sales if you need to replace the battery.

Maintenance

Handle your device and accessories with care. The following instructions help you keep your device operational.

- Keep the device dry. Humidity and all types of liquids or moisture can contain minerals that corrode electronic circuits.
- Do not use or store the device in dusty or dirty areas.
- Do not store the device in over +60 C°/ +140 °F, because these temperatures may damage the device. The battery may leak, explode or even burn at high temperatures.
- Do not store the device in under -5° C/ +23 °F. When the device warms to its normal temperature, moisture can form inside the device and damage it.
- Unauthorized modifications may damage the device.
- Do not drop, knock, or shake the device. Rough handling can break it.
- Only use a soft, clean, dry cloth to clean the surface of the device.
- Keep the device away from magnets or magnetic fields.

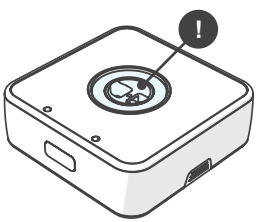
If the white reference target becomes dirty or damaged, reference measurements are corrupted and the device measurement results in reflectance/absorption are unreliable. Please order a new white reference from your distributor or Spectral Engines sales.

Cleaning the Device

Occasionally the device window needs cleaning. Do not use excessive air pressure to clean up the window. Use compressed air to blow out the dirt from the window. The compressed air must be clean and bottled, otherwise oil or water may end up on the window.
Only use oil- and moisture-free compressed air in a spray can for the window.

Proceed as follows:

1. Tip a small amount of isopropanol alcohol on a non-linting cloth.
2. Wipe the window to remove the dirt.



Technical Specifications

Parameters	Specification	Notes
Wavelength range areas	1.35 – 1.65 µm (D1.7) 1.55 – 1.95 µm (D2.0) 1.75 – 2.15 µm (D2.2) 2.00 – 2.45 µm (D2.5)	
Outside dimensions	82 x 82 x 27 mm 3.125” x 3.125” x 1.125”	
Weight	155g / 5.5 oz	
Surface glass	Gorilla-3	
Lamp lifetime	> 40,000 hrs	
Battery	3.7V, 700mAh, rechargeable	
Charging port	USB-C	
Wireless connectivity	Bluetooth Low Energy BLE 4.3	
Wired connectivity	USB-C 2.0	
Illumination source	2 Tungsten Vacuum Lamps	NIRONE Sensor integrated
Internat. Protection	IP54	In-/outdoor use
Operating voltage	5 VDC	
Maximum power	2.5 W	
Maximum current	500mA	

Do not keep or use this device in high temperature, humid environment or above 2,000 m altitude. The operating temperatures are:

Temperatures	Name
Operating temperature	+10 to +50 °C (+50 to +122 °F)
Charging temperature	0 to +45 °C (+32 to +113 °F)
Storage temperature	-5 to +60 °C (+23 to +140 °F) non condensing

Maximum relative humidity 80 % for temperatures up to 31 °C decreasing linearly to 50 % relative humidity at 40 °C

Software	Name	Notes
Device software	Device Firmware	
Mobile application	NIRONE Scanner Mobile App	Android 7.0 or later, iOS 11+

Maximum Power Output

In the European Union, the NIRONE Device may operate within the frequency band 2.4 GHz. Maximum power output by design is indicated in parentheses: Bluetooth® (6 dBm).

Environment Conditions

Intended environment with max pollution degree 2.

Status	LED	Description
Blinking yellow	Battery	Battery is charging
Green	Battery	Battery fully charged
Blinking red	Bluetooth	Scanner is powered on, Bluetooth is disconnected
	Battery	Battery is low
Single red flash	Both	Scanner is powering off
Single blue flash	Both Bluetooth	Scanner is powering on Bluetooth connected

Warranty

This product is covered by a limited warranty. To obtain warranty service, please contact your authorized distributor or Spectral Engines sales. Please confirm the warranty terms and the applicable return policies prior to returning the product (link see below).

Do not attempt to disassemble the device. The warranty is not valid, if the device has been disassembled.

Warranty information:
https://support.spectralengines.com/common/topics/warranty.html

Support

Find more detailed instructions from:
https://support.spectralengines.com

Disclaimer

Devices, software, documentation, and other products offered by Spectral Engines GmbH, hereinafter referred to as the "Products", are not designed to be fault-tolerant and therefore they are not intended to be used for the purposes of life-critical or hazardous environments that require fail-safe performance.

To the maximum extent permitted by law, Spectral Engines GmbH disclaims any and all warranties, whether expressed or implied, including without limitation any implied warranties of title, merchantability, or fitness for any particular purpose, regarding the Products. Without limiting the foregoing, Spectral Engines GmbH expressly does not warrant that:

- the Products will meet your requirements or expectations;
- the Products will be free of bugs, errors, viruses, or other defects;
- any results, output, or data provided through or generated by the Products will be accurate, up-to-date, complete, or reliable;
- the Products will be compatible with any third party software or products; or
- any errors in the Products will be corrected.

To the maximum extent permitted by law, neither Spectral Engines GmbH nor its suppliers will be liable for any damage or losses relating to the use of the Products, including without limitation direct, indirect, special, consequential, punitive or incidental damages, or losses of revenue, profit, or data. In any case the maximum liability of Spectral Engines GmbH will be equal to the purchase price of the Products.

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CE

Declaration of Conformity
Hereby, Spectral Engines GmbH declares that the radio equipment type NIRONE is in compliance with Directives 2014/53/EU and 2011/65/EU. The full text of the EU declaration of conformity is available at https://support.spectralengines.com/downloads/nirone_scanner_doc_ce_29-11-2022_signed_stamped.pdf

UKCA

Declaration of Conformity
Hereby, Spectral Engines GmbH declares that the radio equipment type NIRONE is in compliance with The Radio Equipment Regulations 2017 & RoHS Regulations 2012. The full text of the UKCA declaration of conformity is available at Regulations 2017 & RoHS Regulations 2012.

FC

Supplier's Declaration of Conformity
47 CFR § 2.1077 Compliance Information

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation

Supplier's Declaration of Conformity
47 CFR § 2.1077 Compliance Information

NIRONE Scanner - U.S. Contact Information
tec5USA Inc.
Thiebaud Schneider
Phone: +1 (516) 661-8746
Email: support@spectralengines.com
120 Terminal Drive
Plainview, NY 11803
USA

ISED

IC compliance
This device complies with Industry Canada license-exempt RSS standard(s).

Operation is subject to the following two conditions:
1. This device may not cause interference, and
2. This device must accept any interference, including interference that may cause undesired operation of the device.

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be chosen in such a way that the equivalent isotropically radiated power (e.i.r.p.) is not more than that is necessary for successful communication.

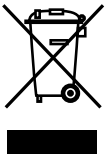
This equipment complies with IC RSS-102 radiation exposure limits set forth for an uncontrolled environment. It should be installed and operated with maintaining a minimum distance of 20 cm between the radiator and your body.

Conformité aux norms d´IC Cet appareil est conforme à la(aux) norme(s) RSS sans licence d'Industry Canada.

Son utilisation est soumise aux deux conditions suivantes:
1. Cet appareil ne doit pas causer d'interférences et
2. il doit accepter toutes interférences reçues, y compris celles susceptibles d'avoir des effets indésirables sur son fonctionnement.

Conformément aux réglementations d'Industry Canada, cet émetteur radio ne peut fonctionner qu'à l'aide d'une antenne dont le type et le gain maximal (ou minimal) ont été approuvés pour cet émetteur par Industry Canada. Pour réduire le risque d'interférences avec d'autres utilisateurs, il faut choisir le type d'antenne et son gain de telle sorte que la puissance isotrope rayonnée équivalente (p.i.r.e) ne soit pas supérieure à celle requise pour obtenir une communication satisfaisante.
Cet équipement respecte les limites d'exposition aux rayonnements IC RSS-102 définies pour un environnement non contrôlé. Il doit être installé et utilisé en maintenant une distance minimum de 20 cm entre le radiateur et votre corps.

This device contains	FCC ID: XPYNINAB1 ISED: 8595A-NINAB1



ANATEL
08963-23-15568

Este equipamento opera em caráter secundário, isto é, não tem direito a proteção contra interferência prejudicial, mesmo de estações do mesmo tipo, e não pode causar interferência a sistemas operando em caráter primário.

內含發射器模組: CCAJ16LP6470T3

Taiwan NCC Warning Statement

經型式認證合格之低功率射頻電機，非經許可，公司、商號或使用者均不得擅自變更頻率、 **加大功率或變更原設計之特性及功能。**
低功率射頻電機之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。前項合法通信，指依電信法規定作業之無線電通信。低功率射頻電機須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。

Statement translation:
Without permission granted by the NCC, any company, enterprise, or user is not allowed to change frequency, enhance transmitting power or alter original characteristic as well as performance to approved low power radio-frequency devices.

The low power radio-frequency devices shall not influence aircraft security and interfere legal communications; If found, the user shall cease operating immediately until no interference is achieved. The said legal communications means radio communications is operated in compliance with the Telecommunications Act. The low power radiofrequency devices must be susceptible with the interference from legal communications or ISM radio wave radiated devices.

KCC South Korea compliance

This documentation is subject to revision without notice.

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