

Getting started with your NutriOpt On-site Adviser

(Compatible with F-series scanner)

This manual explains how to get started with the NutriOpt On-site Adviser, compatible with F-series scanner. To make the most of this innovative solution, please read this document carefully.

User guide index

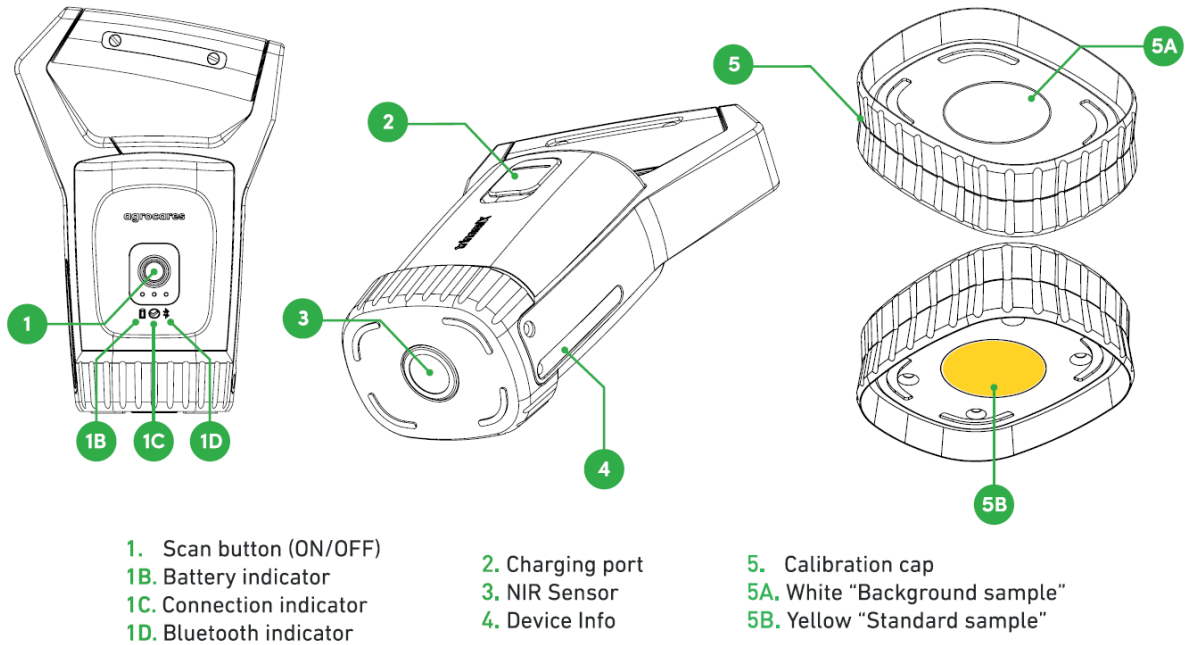
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Box contents

Scanner case

The scanner: The handheld unit that performs the scan

A calibration cap: Cap for White 'background scan' and Yellow 'standard scan' calibrations



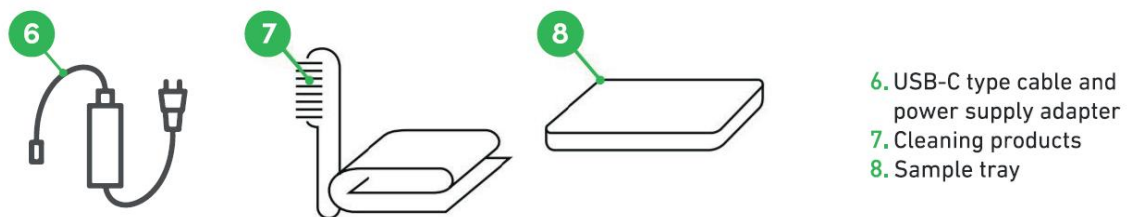
Accessories box

Scanner charger: USB-C type cable + power supply adapter

Cleaning products: Brush and cloth for cleaning the device

Sample tray: A tray where the samples are scanned

Scanner quick reference card: Two-page instruction document



Quality check

All scanners undergo a quality check before being shipped to you. The quality control is performed by AgroCares support technicians to ensure that the scanner you receive functions properly and provides accurate results.

Fingerprints and traces of soil/feed may occasionally be found on the scanner and inside the box. These are the result of the final quality control test conducted by AgroCares before shipment.

Preparing the scanner before use

To maximise the lifespan of your scanner, please follow the steps below to prepare it for use.

Charging instructions

Charge the battery by connecting the power supply adapter and the USB-C type cable to the charging port of your scanner.

Due to IATA (safety) regulations regarding the shipment of batteries, fully charged devices cannot be shipped. Therefore, please ensure that you charge the scanner until it reaches full capacity.

Please take note that the battery cannot be charged if the device temperature is too high. In such cases, please allow the device to cool down before charging. It is important to charge the device at room temperature, making sure it does not exceed 30°C/86°F.

Battery Indicator

Red flashing, 1x/1 s	Battery capacity < 4 % (device in power save mode)
Red flashing, 3x/1 s	USB power delivery charger not compatible
Green flashing, 1x/2 s	Charging (USB power delivery charger connected)
Green/red flashing, 1x/1 s	Battery level < 10 % (no USB power delivery charger connected)
Green flashing, 1x/1 s	Battery level < 30 %
Green	Battery level high
Off	Device off, no USB power delivery charger connected

Expected power usage

On a fully charged battery, the scanner can perform around 5,000 scans, or approximately 700 samples. To fully recharge it, charge the scanner for 3 hours (at European voltage 220V–240V).

Charge the battery every 3 months even if you are not using the scanner to avoid any damage to the battery.

Before the first use or if the scanner has not been used for more than four weeks, it is recommended to fully charge the scanner.

Installing the mobile app

Downloading the mobile app

You can find the On-site Adviser mobile app called 'NutriOpt Portable Analyser app' in Google Play and the Apple App Store.

Android device requirements

Use Android 7.1 or later. To download the app from the Play Store, your Google Play account should have a device certification. This certification can be found in the Google Play Store setting under 'Play Protect Certification'.

Apple device requirements

Use iOS 13 or later with iPhone model 6 or above.

Once you have downloaded the app, it will request access to images and location data on your device. This access is required to register the sample and obtain the nutritional report.



Login to the mobile app

Before you start using your new On-site Adviser scanner, you need to activate your account. Please contact your Trouw Nutrition representative to obtain access. You can find your regional Trouw Nutrition contact person via this web page:

<https://www.trouwnutrition.com/en/Global-presence/>

Login to the mobile app

After installing the NutriOpt Portable Analyser app on your mobile phone, you can log in by following the steps outlined in the email titled 'Welcome to NutriOpt On-site Adviser'.

You can now proceed to the next step.

Start-up and connect

Turn the scanner on

Press the round button on the scanner for one second (Figure 1). The scanner will initiate the start-up sequence with a steady green battery light (if fully charged) and two flashing red Bluetooth and measurement lights (1x/1 s). The scanner is now ready to connect to the phone.

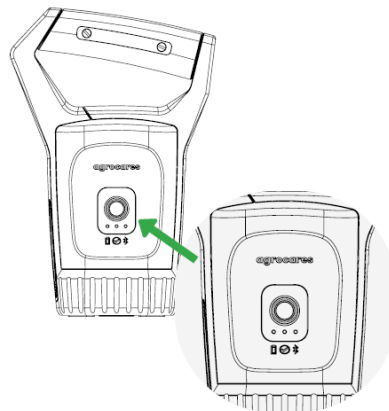


Figure 1

Stable internet connection

The scanner is used in combination with the **NutriOpt Portable Analyser app**. A stable internet connection is required to log in, scan and synchronise your data.

It is also possible to scan a sample without internet and synchronise it later. Make sure that you do not log out or close the app before synchronisation is complete. This will prevent loss of data.

Connect the scanner to your mobile app

Open your NutriOpt Portable Analyser app. Go to the 'Account' menu. Click on 'Select scanner' in the 'Device settings' bar.

- Click on 'Search for devices' and select your scanner name from the 'Available devices' list. You may need to accept location permissions.
- When your phone and scanner are connected, the Bluetooth light on the scanner will flash green (1x/1s). To save battery power, the scanner often goes into 'sleep' mode and the Bluetooth light turns red. Once you start the scanning process, the scanner will reconnect with the mobile phone and the Bluetooth light will flash green.

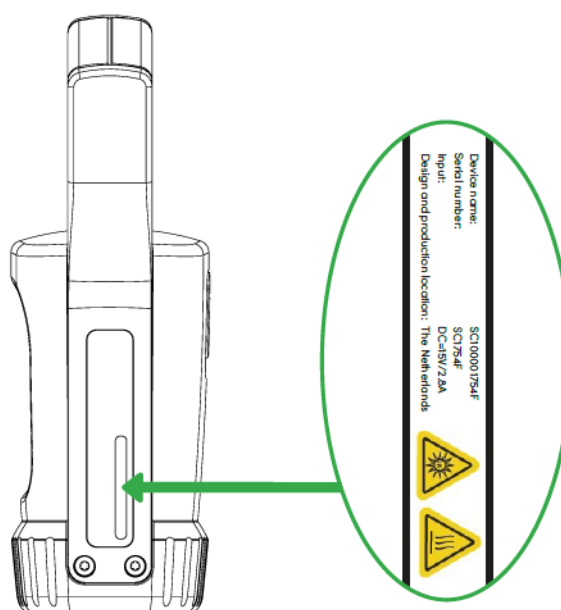


Figure 2

The device name of your scanner is on the back side of the handle (Figure 2). The device name should follow this scheme: 'SCxxxxxF'.

For example 'SC000012345F'.

Scanning a sample

Once you have paired the scanner with your phone, press the 'Start' button in the NutriOpt Portable Analyser app to launch the scanning process.

If you have access to more than one licence, select the one you want to use for this scan.

Select the material you will analyse from the drop-down Material menu and provide a description of your sample. Once you press 'Next' the app will take you to the 'Client Selection' screen so you can assign your sample to a client if you wish.

By pressing 'Next', the app will guide you through the scanner calibration process.

The calibration process

The scanner lights will indicate that the scanner must be calibrated when the measurement light flashes red (1x/1s). The app will also indicate when this is necessary – always before scanning a sample. Calibrating your scanner is a two-step process:

1. Open Air Scan

Point the scanner at the ground at about 0.5–1 metres from the ground and press the Scan button. Do not cover the glass surface and do not point at a reflective surface.

2. Calibration cap scan

White background scan with the calibration cap:

Before each new scan, a white background calibration needs to be performed with the calibration cap.

- Check if the sensor head and glass plate are free of dirt and moisture. If necessary, clean them with the brush and/or the cleaning cloth.
- When the scanner is clean, place it in the calibration cap facing the white side. The scanner head must be in contact with the white surface.
- Start the calibration process by pressing the 'Scan' button on the device or on the mobile app.

Yellow standard scan with the calibration cap:

- Sometimes the app will ask you to take a yellow standard sample, which must be calibrated with the yellow side of the calibration cap.
- Turn the calibration cap with the yellow side facing upwards. The scanner head must be in contact with the yellow surface of the calibration cap.
- Start the scanning process by pressing the 'Scan' button in the app or on the device for one second.

When the calibration process is complete, you will be automatically redirected to the sample scanning process.

Note: Keep the yellow side of the calibration cap clean, but do not clean it using moisture/detergents as this may damage the cap! See section 'cleaning the scanner after use'.

If the background scan was not successful, an error message will appear in the app. Follow the instructions to resolve the issue. If the issue persists, please contact support (see page 14).

Important: Do not move the scanner during the scanning process!

Preparing the sample

A sample must be prepared before you can start scanning. Prepare a sample large enough to represent your testing area. See pages 10 to 13 for information on how to take a good and representative sample.

A total of five scans are required to get an accurate measurement of your sample. To get a good scan, it's important that the bottom of the sample tray is completely covered with the material you want to analyse. You will often collect more material than will fit in the sample tray (especially with manual sampling).

In this case, for the best analysis result, you should first divide your material as follows:

- Place the material on a clean, flat plate/panel and divide the sample into 2 or 4 equal parts (see Figure 3) and remove the opposite parts as shown.



Figure 3

- Add all remaining parts to the tray to analyse the small particles of the sample as well.
- Mix your sample well before filling the sample tray to the rim. If scanning a silage sample, fill a large tray (approx. 40x60cm).
- The sample can now be scanned.

Carry out the scan within 15 minutes of collecting the samples. To do this, follow the instructions in the NutriOpt Portable Analyser App. You will also find the 7 easy steps for scanning a sample on the next page.

Please note: you can only analyse a sample once. As the lamp in the scanner heats the material, the percentage of dry material will be affected during a new analysis.

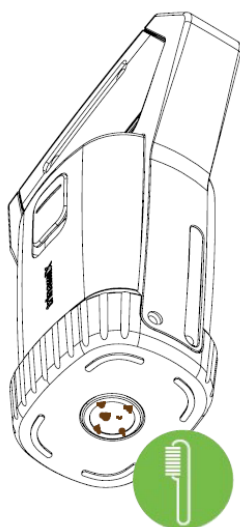
Seven steps to scan a sample

1. Place the scanner on top of your sample. Make sure the scanning surface of the sensor/scanner head is in contact with your sample. You do not need to press down on this as the weight of the scanner is sufficient.
2. Press the 'Scan' button on the scanner for one second or press the 'Scan' button in the app to start the scanning process. Do not move the scanner while it is scanning or while the scan (green) light is flashing. The app will notify you when you can continue to the next scan. Clean the lens with a dry cloth/paper towel after each scan (i.e. five times for each analysis). For more information on cleaning, please see pages 8 to 9.
3. When the scan is complete, place the contained sample back in your bucket. Mix it thoroughly, fill a new sample tray and repeat the process. In the case of silage, you can position the scanner in a different place in the tray.
4. Continue to repeat steps 1 to 3 until all 5 required valid scans have been completed. Follow the process in the app to generate a report.
5. After completing these steps, follow the process in the app to register a new client or to assign the sample to an existing client.
6. Switch the scanner off and make sure it is properly cleaned before placing it back in the case.
7. Implement your findings.

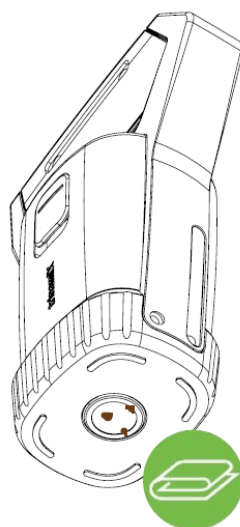
Cleaning the scanner after use

Proper care of the sensor head is needed to ensure a reliable performance of the device. After each silage scan, clean the bottom and glass parts of the scanner using the brush and the dry cloth. The glass surface of the handheld scanner must be cleaned with wet wipes (EtOH).

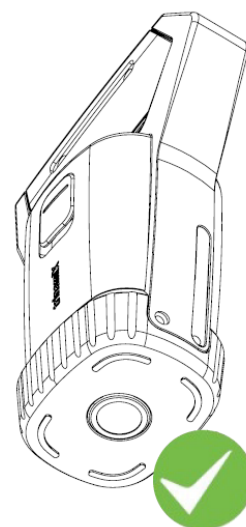
A. Use the cleaning brush to remove soil from the metal EC probes and the glass until all visible particles are removed.



B. Use the wipes to remove the small particles until no dirt can be observed.



C. Result: clean sensor head.



Cleaning the calibration cap

The white part of the calibration cap needs to be clean. The yellow side of the calibration cap cannot, in any way, handle water. Additionally, the yellow part is made of fibre material which cannot be brushed. Scan both sides of the cap only with a clean scanner and wipe it gently with a soft cloth if it is a bit dirty. Do not use any detergents.

Calibration isn't possible if the white side isn't completely white anymore or if the fibres of the yellow side of the cap are loose. In this case, the calibration cap must be replaced.

If your calibration cap is damaged, discoloured or malfunctions in any other way, please contact your Trouw Nutrition contact person (<https://www.trouwnutrition.com/en/Global-presence/>).

Implementing your findings

You can implement the findings of the NutriOpt On-site Adviser in several ways. Generally, these fall into two categories:

- *Raw material quality control*
- *Adjusting your feed formulation*

Raw material quality control

Amid fluctuating markets, nutritional profiles of raw materials are continuously changing, which means the most suitable diet for any operation is constantly evolving. This can be particularly challenging for swine or broiler farms, which rely on consistent growth of animals over a short period of time.

For example, broilers may only have a growth period of 35–42 days, and any nutritional issue can mean that they do not reach the target weights in this given period. There is little opportunity to correct diets and make up lost time, so these issues can result in significant financial costs for producers. In the case of ruminants, silage quality can vary considerably, which means that milk production can also vary. Diets are often formulated based on a single silage analysis, which means that as the quality of the silage fluctuates, so too will the health and productivity of the cow.

If the silage quality is lower than expected, and this isn't taken into account when preparing the mix, the animal will receive less energy than expected. This will result in lower yields and health issues, such as reduced fertility. However, if you are able to measure silage quality on-site more often, you can adjust the feed mix and ensure that it remains consistent, which means that milk production and health aren't affected. Similarly, for broilers and swine, if you are confident in the quality of the nutrients you're feeding your animals on a daily basis, you can easily predict their weight gain.

Adapting your feed formulation

We all know that the feed mix for a cow will be very different than for a pig or a chicken. But it's also true that the most nutritious diet for an animal isn't always the most optimal mix for your business. For example, it has long been the norm to formulate broiler diets based on maximum animal performance. But this can require a highly concentrated and protein-rich diet, which can be costly and may have a negative impact on profitability. By combining market data with technical data, it's possible to accurately formulate the best possible diet for your livestock that also generates the best return on investment, potentially even saving on feed costs. This means that 'optimal feed' certainly won't be a 'one-size-fits-all' approach. It should be tailored specifically to each farm and linked directly to its business objectives.

The data from the NutriOpt On-site Adviser can be fed into/linked to your formulation software to adjust your feed mix for optimal animal and business performance.

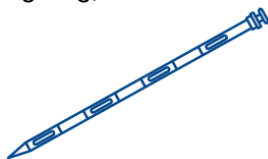
Sampling instructions

Sampling instructions for dry raw materials

Sampling of bags and big bags

Equipment

Preferred equipment: Spear (length of bag and big bag)

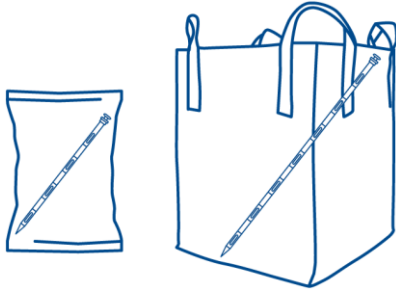


Alternative equipment: Scoop



Method of sampling

Preferred sampling method



Alternative sampling method



Number of samples

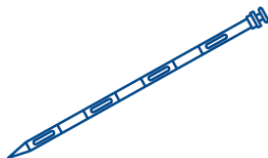
Each individual sample should be at least 150 grams. Put every sample in a clean bucket and mix the whole sample well.

Bag and big bag	
< 10 bags	1 sample per bag
10 – 100 bags	1 sample every 10 bags, randomly
> 100 bags	At least $\sqrt{\text{total number of bags}}$

Sampling of bulk trucks

Equipment

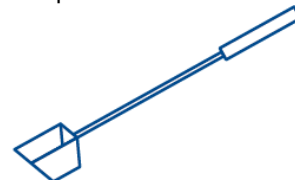
From the truck: Spear



From the truck: Automatic truck probe sampler



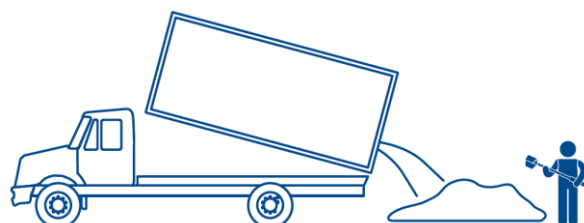
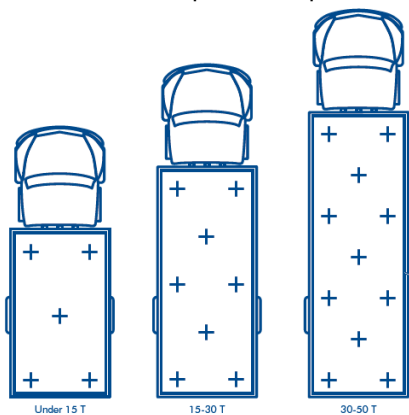
While emptying the truck: Scoop



Method of sampling

From the truck: Spear and probe sampler

While emptying the truck: Scoop



Number of samples

Each individual sample should be at least 150 grams. Put every sample in a clean bucket and mix the whole sample well.

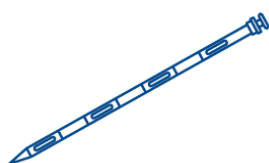
From the truck	
< 15T	5 samples
15T – 30T	8 samples
30T – 50T	11 samples

While emptying the truck
At least 10 takings across the time of emptying

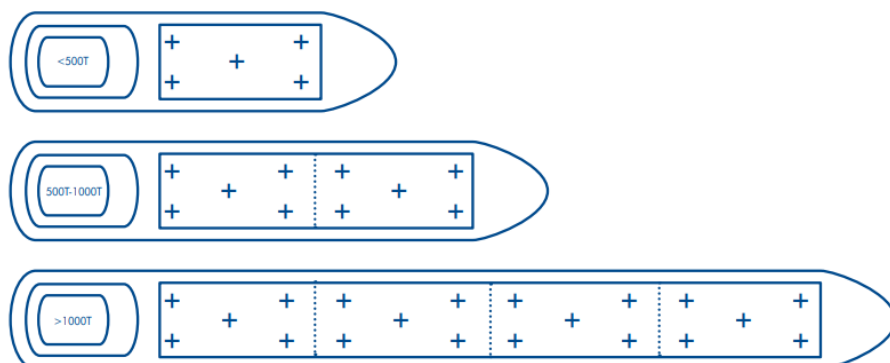
Sampling of vessels

Equipment

Preferred equipment: Spear of 2 meter



Method of sampling



Number of samples

Each individual subsample should be at least 150 grams. Put every subsample in a clean bucket and mix the whole sample well.

From the vessel	
<500T	1 sample (consisting of 5 subsamples) every 100T
500T – 1000T	1 sample (consisting of 5 subsamples) every 250T
>1000T	1 sample (consisting of 5 subsamples) every 500T

Sampling instructions for silage pit

Equipment

- Silage core sampler mounted on a cordless drill (alternatively, a manual core sampler)
- Optional: bucket or other container to collect samples and a clean flat plate or panel

Method of sampling

1. For a sample to be used in the same day's ration formulation: take a sample at the pit face. The analysis result will be heavily affected by how wet or dry the silage is. The extent of this varies by day (and by time of day).
2. For the ration formulation for the following day or later in the week: take a sample 10 to 15 cm into the pit face.

The preferred method is to take the samples using a silage core sampler mounted on a cordless drill. If a manual core sampler is used, it's important to place the palm of your hand under the sampler to catch the small particles of the silage and prevent them from being lost. Collect the samples in a bucket.

Number of samples

Does the silage pit have various layers that are otherwise the same across the width? If so, take samples from top to bottom – at least five and preferably nine – as shown in Figure 4.

Does the silage pit have various layers and are these layers not the same thickness across the width? If so, take nine samples in a W-pattern as shown in Figure 5, with a representative amount per layer.



Figure 4

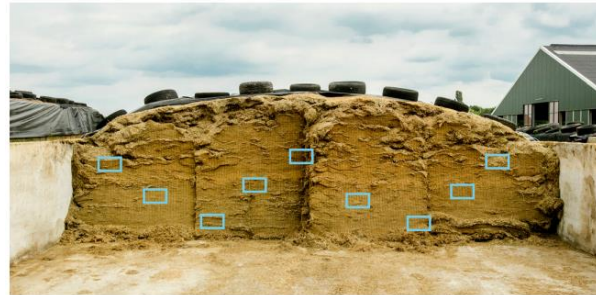


Figure 5

MyNutriOpt

With the NutriOpt On-site Adviser service, you will also receive access to the MyNutriOpt online platform. You will receive a separate email to set this up. On the MyNutriOpt platform, you are able to:

- ✓ View and share your NutriOpt On-site Adviser reports
- ✓ Set and monitor data standards
- ✓ Track the quality of your materials over time

If you don't setup your MyNutriOpt account, you are still able to use your NutriOpt On-site Adviser and view your results only in the app without any problems.

Support

If you encounter any issues with your device or app, you can get support from your Trouw Nutrition contact person. Our support team will contact you as soon as possible with a solution for your issue. For frequently asked questions about the NutriOpt On-site Adviser and/or contact details of your Trouw Nutrition support person, please go to our online support platform: www.nutriopt.com/support

WARNING:

Avoid eye contact with the light source of the scanner.

Burn hazard: the bottom parts of your scanner are hot while in use. Do not touch these parts unless the scanner is turned off and has cooled down.



Find more information on: www.trouwnutrition.com/onsiteadviser
Or contact your nearest Trouw Nutrition expert.