



# Operating manual

for the NIR analyser

**Apo-Ident 2.1**

based on version 2.10



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## 1. Starting the program

Start the program „QuickStep Apo-Ident“ by double-clicking on the desktop icon. The Apo-Ident user interface opens.

**Note:** If the internal unit temperature is too low, a warm-up program is started automatically. When the temperature of at least 20°C is reached, the system is ready to start.

## 2. Selection of the pharmacy

Choose your stored pharmacy under **Configuration profile**, if you have more than one configuration profile.

**Note:** Our detailed instructions on **Section 1.5.1.** explain how to create a configuration profile.

## 3. Selection of the substance

Under **Substance**, enter cannabis flower in the search field. The monograph name, the Latin name and the classifier, in this case “cannabis flower”, are now displayed.

## 4. Determination of cannabis flower content

### Start measurement

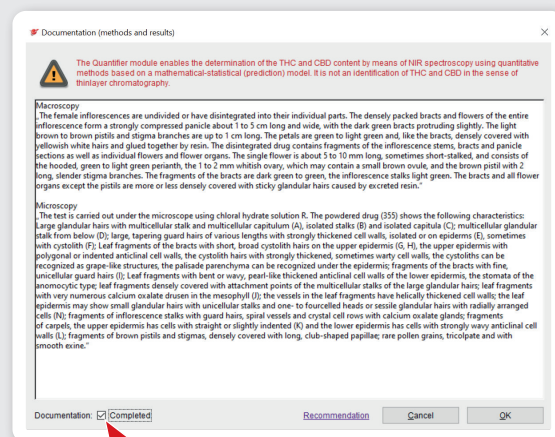
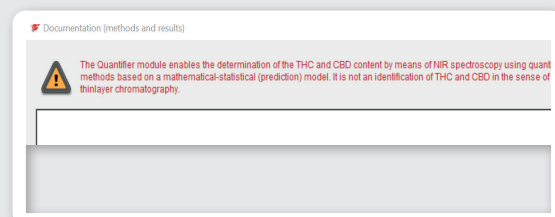
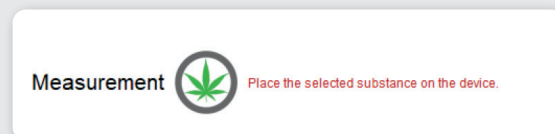
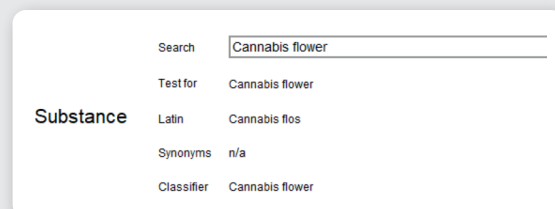
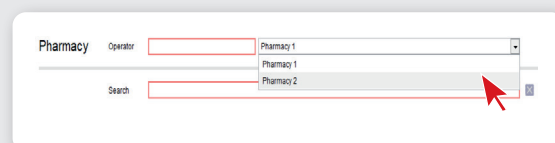
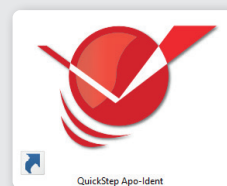
First place your **sample cup with the cannabis flower** (if possible, place the stem upwards to get a large contact surface in the cup) and the **adapter ring** on the measurement point.

Start the measurement process by clicking on the cannabis button next to **Measurement** or by pressing the measurement button (lights up green) directly on the top of the device.

The „**Documentation (methods and results)**“ window will now appear.

Please read the text „**The Quantifier module enables the determination of the THC and CBD content by means of NIR spectroscopy using quantitative methods based on a mathematical-statistical (prediction) model.** It is not an identification of THC and CBD in the sense of thinlayer chromatography“ carefully.

In the following text field, enter the steps you have carried out in advance and the result of the identity check. You can display help on macroscopy and microscopy under **Recommendation**. Once you have entered the documentation and the associated identity check, the „**Documentation: completed**“ box can be checked. By clicking on OK, the window closes and the measurement is started.



## Referencing

After the first measurement, you will be asked to place the supplied reference standards onto the measurement point. Follow the instructions in the software and first place the black reference and then the white reference on the measuring point. Start the reference measurements by clicking on the black or white button next to **Measurement** or by pressing the measurement button (lights up green) directly on the top of the device.

**Note:** Please always use the black adapter ring. The measurement of the references is requested again by the software after approx. 60 min.

## 5. Result

### Determination of the content of cannabis flowers:

After a few seconds, the device shows you the THC and CBD content and the type classification of your measured cannabis flower.

## 6. Report details

After successful measurement, fill in all mandatory fields (marked with a red frame) next to the **Sample** as well as **Pharmacy > Tester**. If required, a comment can be filled in under **Result**, as well as reopening the documentation or the suggestion for macro and microscopic testing.


Please note that only after filling out all mandatory fields can you create the report.

## 7. Creating the report


Now you can save the measurement result, view the test report as a PDF file, or print it out.


**Note:** No matter which function you select, the measurement result will be saved in any case. In addition, you may also print your test label on your label printer.


Black reference



White reference



Measurement 

Measurement 

Result

Name

Cannabis flower (THC-dominant type)

THC

16.7% ± 5.8% (wt)

CBD

8.8% ± 2.2% (wt)

Comment

Documentation

Macroscopy: The female inflorescences are undivided or have disintegrated into their individual parts. The densely packed...

Recommendation

Sample

PPH

Variety

Producer

Expiry date

Batch

Grace Period

Quantity

Content

% THC

% CBD

Supplier

Delivery date

Report

Save

PDF

Print

Print Label

240716-152048

### 1. First steps

#### 1.1. Safety instructions

Please read the safety instructions carefully.

- Use only the power supply unit or power cord supplied.
- If the power connector cord or the power supply unit is defective or damaged, contact the manufacturer immediately. Operation with a defective power cord or power supply unit may be life-threatening.
- Environmental influences such as high temperatures and high humidity must be avoided, as well as dust, dirt and corrosive gases.
- The installation site should be well ventilated and not exposed to direct sunlight. Install the device on a non-combustible, horizontal surface that does not transmit vibrations.
- Make sure that there is no ingress of objects or liquids into the device. If this happens, immediately unplug the device and contact the manufacturer.
- Do not open the device. There are no user-serviceable parts inside the device.
- Do not operate the device in explosive or flammable atmosphere.
- Apo-Ident is often used for determining hazardous substances. This type of work should be undertaken only by qualified personnel. If you are not absolutely sure, contact your supervisor or a competent expert.

#### 1.2. Software installation

- Connect the provided USB flash drive to your PC.
- Drag the "Apo-Ident" folder to your desktop and open the „Current Software“ folder in it. Start the installation by double-clicking on QuickStep\_\*.exe. Read and accept the licence conditions. Follow the set-up wizard.
- Now install the Quantifier module by double-clicking on the QuantifierModul\_\*.exe file. Read and accept the licence conditions. Follow the setup wizard.
- Thereafter, if the installation is correct, you will get an update certificate displayed. Save the certificate in the folder "Apo-Ident/Update certificates" with specification of the version or the date.

### 1.3. Connecting the analyser

Apo-Ident 2.1 requires a power connection and computer/laptop (for system requirements see **Section 6.1**) with Apo-Ident software installed. Connect the power supply unit supplied (100 V to 240 V~ and 50/60 Hz) to a mains socket using an IEC and then plug the small round plug of the desktop power supply unit into the socket marked 12V IN on the back side of the device.

#### Connection via USB cord

Use the USB cable supplied to establish connection with a USB port on your PC/laptop to the USB type B port on the back side of the Apo-Ident device. Switch on the device with the toggle switch on the back side of the device. The signal lamp in the control button on top of the device lights up in red colour. Apo-Ident is now ready for use.

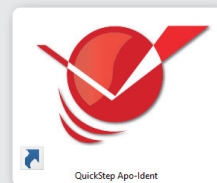
### 1.4. Starting the program

Start the program „QuickStep Apo-Ident“ by double-clicking on the desktop icon. The Apo-Ident user interface opens.

**Note:** If the internal unit temperature is too low, a warm-up program is started automatically. When the temperature of at least 20°C is reached, the system is ready for operation.

### 1.5. Apo-Ident settings

When the program is started for the first time, the settings open automatically. By default, a demo profile is saved, which is used for presentations. **However, you cannot create valid test reports with the demo profile!**



## 1.5.1. Report settings

**Settings > Report Settings >** To create your own profile, click on the Configuration profile button on the right side of the „+“ sign.

Enter the name of your pharmacy as the profile name and confirm with **<OK>**.

Another window will open asking you to enter your licence key.

**Note:** If you use Apo-Ident in more than one pharmacy, you need a separate licence key for each pharmacy and you have to create a separate configuration profile for each pharmacy.

For new customers, the licence key is inserted by our sales staff at the time of delivery.

Thereafter, you will find it on the desktop as a PDF under 'Licence documents' in the 'Apo-Ident' folder or on the USB flash drive supplied.

You will need your licence key again in the following cases:

- Re-installation
- Change of computer

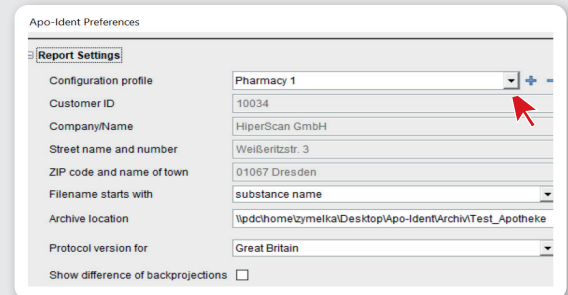
If you have misplaced your licence key or need support, please contact our customer service on telephone +49 351 212 496 33 or via e-mail to [kundenservice@apo-ident.de](mailto:kundenservice@apo-ident.de).

**Filename starts with >** Here you can select whether the „Primary substance name“ (English) or, if available, the „Latin substance name“ should be used in the file name of the test report.

**Archive location >** If a profile is created, the software automatically saves the archive (test reports) on the desktop under *Desktop/Apo-Ident/Archiv/Profile\_Name1*

If a second profile is created, the software also saves the second archive under *Desktop/Apo-Ident/Archiv/Profil\_Name2*

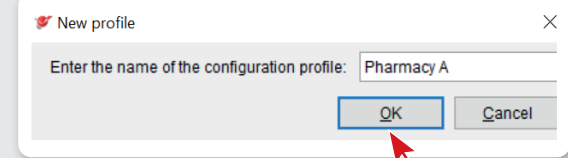
This ensures that several profiles are not saved in one and the same archive and that no errors occur while retrieving the archive.



Apo-Ident Preferences

**Report Settings**

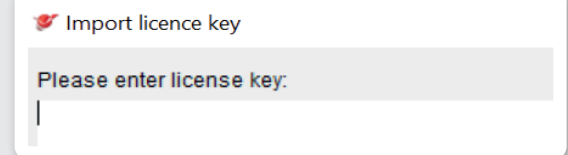
Configuration profile	Pharmacy 1
Customer ID	10034
Company/Name	HiperScan GmbH
Street name and number	Weißentzstr. 3
ZIP code and name of town	01067 Dresden
Filename starts with	substance name
Archive location	\\pdc\home\z\melka\Desktop\Apo-Ident\Archiv\Test_Apotheke
Protocol version for	Great Britain
Show difference of backprojections	<input type="checkbox"/>



New profile

Enter the name of the configuration profile: Pharmacy A

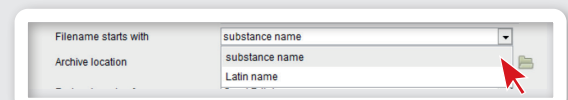
**OK** **Cancel**



Import licence key

Please enter license key:

\_\_\_\_\_

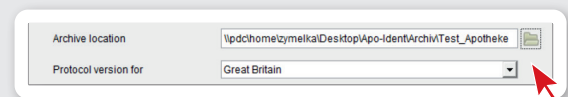


Filename starts with

substance name

substance name

Latin name



Archive location

\\pdc\home\z\melka\Desktop\Apo-Ident\Archiv\Test\_Apotheke

Protocol version for

Great Britain

**Note:** During the initial installation by our sales staff, the folder structure „Apo-Ident“ is created for you, which integrates the archive. If you would like to change the destination for saving files, first move the entire „Apo-Ident“ folder from your desktop to the new storage location. This may be a local drive or a network drive on your PC. You can change the archive directory by clicking on the folder symbol under „Profile storage location“ in Settings, Report settings. In the „Select archive directory“ window that opens, select the appropriate drive on the left and the desired folder on the right where you want to move the „Apo-Ident“ folder. Closing the settings window will transfer your changes. In the menu bar, you can use the „Archive“ button to check whether the new path has been accepted.

**Report version for** > The language or form of the test report for the selected profile is preset. You cannot change this.

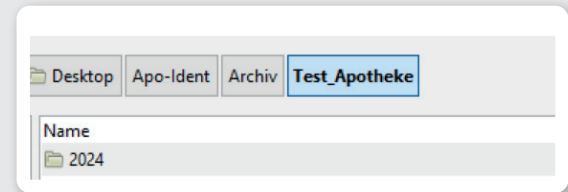
**Note:** If after measuring and saving the report, you notice that the report version needs to be changed, the measuring has to be repeated after changing the necessary settings.

### 1.5.2. WLAN-/LAN Settings

Please leave these settings as they have been pre-configured. If you have any questions, please contact customer service via e-mail at [kundenservice@apo-ident.de](mailto:kundenservice@apo-ident.de) or by telephone on + 49 351/212 496 33.

### 1.5.3. Settings for the Quantification-Module

Please leave these settings as they have been pre configured (identification: „Local Quantification Module“).





## 1.5.4. Brother label printers

### Installing drivers for Brother printers

**Up to Windows 10:** First install the drivers. You will find these on the USB stick supplied under *Useful information/Brother drivers/up to Win10*. Select your model and start the D\_SETUP.exe application. Follow the installation instructions.

**Windows 11:** First install the driver. You will find this on the USB stick supplied under *Useful information/Brother driver/Win11*. Follow the installation instructions.

Alternatively, you can find the latest drivers online at the [Brother Solution Center](#).

### Setting up in the Apo-Ident software

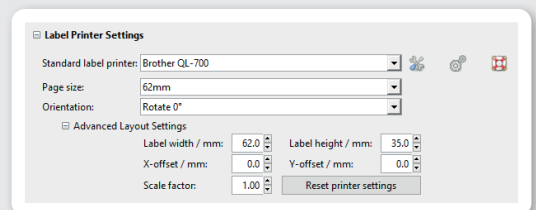
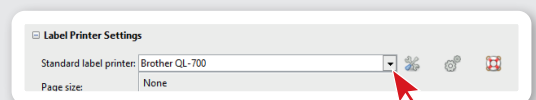
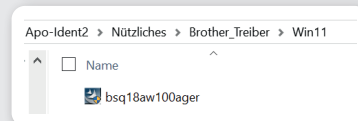
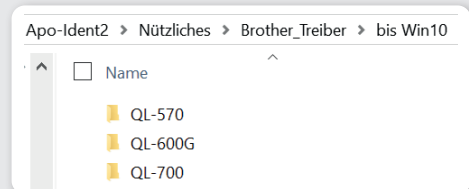
If you have installed the drivers successfully, you can now choose your printer from the **Standard label printer** list (Brother QL-700 or older models) under **Label Printer Settings**.

### Continuous Paper Settings DK-22205

Choose the following settings:

- Page size: 62mm
- Orientation: Rotated by 0°

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### Advanced Layout Settings:

- Label width / mm: 62.0
- Label height / mm:: 35.0
- X-offset / mm:: 0.0
- Y-offset / mm:: 0.0
- Scaling factor:: 1.00

Now click on the left **tool icon** „Open printer settings“. Change the following settings in the dialogue window that opens:

- Paper Size: 62mm
- Length: 35.0
- Belt feed:: 3.0
- Alignment: Portrait format
- Quality: Prioritise print quality 300 x 300 dpi

Click first on **<Apply>** and then confirm with **<OK>**. You are now back in the settings of the Apo-Ident software.

**Note:** You can check your settings by starting a test print. To do this, click on the middle icon **“Print test label”**.

If your test print was successful, click **<Close>**. Your settings are accepted and saved.

### Settings for single labels DK-11201

Choose the following settings:

- Page Size: 29 mm x 90 mm
- Orientation: Rotated by 90°

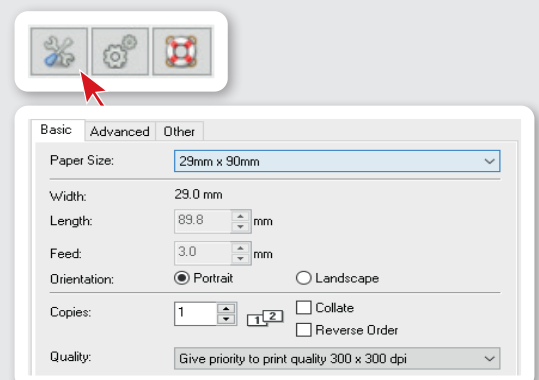
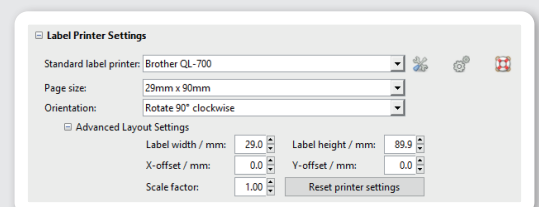
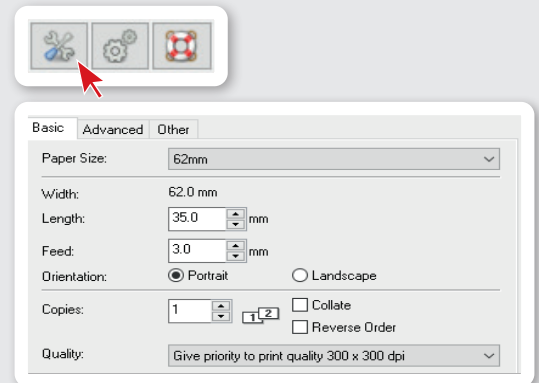
### Advanced Layout Settings:

- Label width / mm: 29.0
- Label height / mm: 89.9
- X-offset / mm: 0.0
- Y-offset / mm: 0.0
- Scaling factor: 1.00

Now click on the left **tool icon** „Open printer settings“. In the dialogue window that opens, modify the following settings:

- Paper size: 29 mm x 90 mm
- Alignment: Portrait format
- Quality: Prioritise print quality 300 x 300 dpi

Click first on **<Apply>** and then confirm with **<OK>**. You are now back in the settings of the Apo-Ident software.



**Note:** You can check your settings by starting a test print. To do this, click on the centre „Print test label“ icon. If your test print was successful, click **<Close>**. Your settings are applied and saved.

## Installation of the driver software for DYMO LabelWriter

First install the driver. You will find these online at the [DYMO Support Center](#). After installing the printer driver, connect the printer to your PC.

### Settings for single labels 99012

Select the following settings under **<Settings>** **<Label printer settings>**:

- Default label printer: DYMO LabelWriter 450 or DYMO LabelWriter 550
- Page Size: 99012 Large Address
- Orientation: Rotate 0°

### Advanced Layout Settings:

- Label width / mm: 35.8 mm
- Label height / mm: 88.4 mm
- X-offset / mm: 0 mm
- Y-offset / mm: 0 mm
- Scaling factor: 2.20

Now click on the left tool icon **<Open printer settings>**. Change the following settings in the dialogue window that opens:

- Orientation: Landscape
- Page Order: Front to back

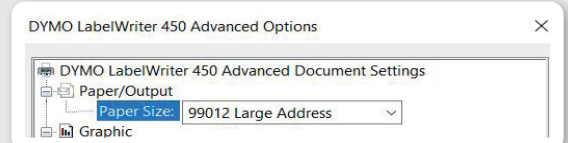
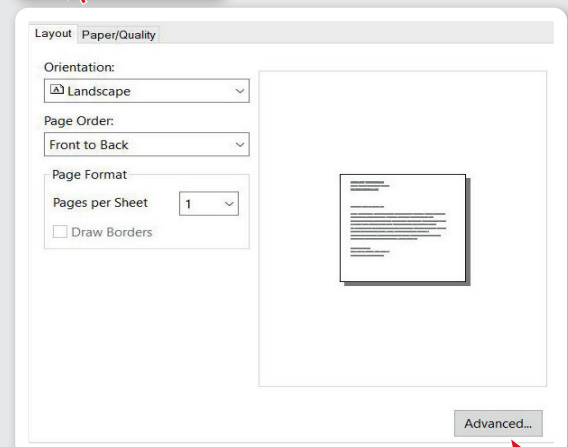
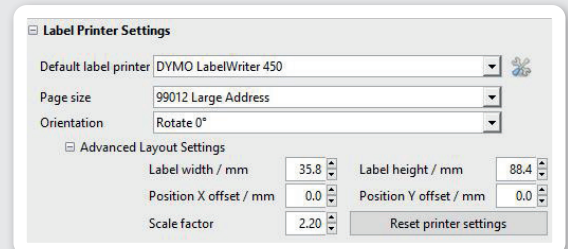
Click **<Advanced>** to make the following setting:

- Paper/Output: 99012 Large Address

Click first on **<OK>** and then confirm with **<OK>**. You are now back in the settings of the Apo-Ident software.

**Note:** You can check your settings by starting a test print. To do this, click on the middle icon **<Print test label>**. If your test print was successful, click **<Close>**. Your settings are accepted and saved.

**Note:** These instructions only apply to the label printer DYMO LabelWriter 450/550 with labels 99012. With other DYMO models (e.g. Turbo, Twin Turbo, etc.) the label settings may differ.



## 2. Measurement

Under **Substance**, enter cannabis flower in the search field. The monograph name, the Latin name and the classifier, in this case „cannabis flower“, will be displayed .

**Note:** The cross behind the search field deletes all your entries.

### Start measurement

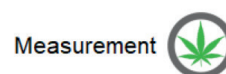
Place your **sample cup with the cannabis flower** and the **adapter ring** on the measurement point. Start the measurement process by clicking on the cannabis button next to **Measurement** or by pressing the measurement button (lights up green) directly on the top of the device.

**Excursus „Correct filling of the sample cups (Cannabis Flower)“:** Place the cannabis flower to be tested in the sample cup with the stem facing upwards so that the flower covers most of the bottom of the cup. The more surface area is covered, the more accurate the measurement results will be.

The „**Documentation (methods and results)**“ window will appear. „The Quantifier module enables the determination of the THC and CBD content by means of NIR spectroscopy using quantitative methods based on a mathematical-statistical (prediction) model. This is not an identification of THC and CBD in the sense of thin-layer chromatography“.

In the following text field, enter the tests you have carried out in advance and the respective result. For help with macroscopy and microscopy, click on the [Recommendation](#). Once you have entered the documentation, you can click on the „**Documentation: completed**“ box. Click OK to close the window and start the measurement.

Search	Cannabis flower
Test for	Cannabis flower
Substance	Latin Cannabis flos
Synonyms	n/a
Classifier	Cannabis flower



Place the selected substance on the device.

Documentation (methods and results)

The Quantifier module enables the determination of the THC and CBD content by means of NIR spectroscopy using quantitative methods based on a mathematical-statistical (prediction) model. It is not an identification of THC and CBD in the sense of thin-layer chromatography.

Documentation (methods and results)

The Quantifier module enables the determination of the THC and CBD content by means of NIR spectroscopy using quantitative methods based on a mathematical-statistical (prediction) model. It is not an identification of THC and CBD in the sense of thin-layer chromatography.

**Macroscopy**  
The female inflorescences are undivided or have disintegrated into their individual parts. The densely packed bracts and flowers of the entire inflorescence form a strongly compressed panicle about 1 to 5 cm long and wide, with the dark green bracts protruding slightly. The light brown to brown pistils and stigma branches are up to 1 cm long. The petals are green to light green and, like the bracts, densely covered with yellowish white hairs and glued together by resin. The disintegrated drug contains fragments of the inflorescence stems, bracts and panicle sections as well as individual flowers and flower organs. The single flower is about 5 to 10 mm long, sometimes short-shaled, and consists of the hooded, green to light green perianth, the 1 to 2 mm whitish ovary, which may contain a small brown ovule, and the brown pistil with 2 long, slender stigma branches. The fragments of the bracts are dark green to green, the inflorescence stalks light green. The bracts and all flower organs except the pistils are more or less densely covered with sticky glandular hairs caused by secreted resin.

**Microscopy**  
The test is carried out under the microscope using chloral hydrate solution R. The powdered drug (355) shows the following characteristics: Large glandular hairs with multicellular stalk and multicellular caputulum (A), isolated stalks (B) and isolated caputula (C); multicellular glandular stalk from below (D); large, tapering guard hairs of various lengths with strongly thickened cell walls, isolated or on epidermis (E), sometimes with cystoliths (F); Leaf fragments of the bracts with short, broad cystolith hairs on the upper epidermis (G, H), the upper epidermis with polygonal or indented anticlinal cell walls, the cystolith hairs with strongly thickened, sometimes warty cell walls, the cystoliths can be recognized as grape-like structures, the palisade parenchyma can be recognized under the epidermis; fragments of the bracts with fine, unicellular guard hairs (I); Leaf fragments with bent or wavy, pearl-like thickened anticlinal cell walls of the lower epidermis, the stomata of the anomocytic type; Leaf fragments densely covered with attachment points of the multicellular stalks of the large glandular hairs; leaf fragments with very numerous calcium oxalate droplets in the mesophyll (J); the vessels in the leaf fragments have helically thickened cell walls; the leaf epidermis may show small glandular hairs with unicellular stalks and one- to fourcelled heads or sessile glandular hairs with radially arranged cells (K); fragments of inflorescence stalks with guard hairs, spiral vessels and crystal cell rows with calcium oxalate glands; fragments of carpels; the upper epidermis has cells with straight or slightly indented (L) and the lower epidermis has cells with strongly wavy anticlinal walls (L); fragments of brown pistils and stigmas, densely covered with long, club-shaped papillae; rare pollen grains, tricolpate and with smooth exine.

Documentation: ☒ Completed [Recommendation](#) Cancel OK

## Referencing

After the first measurement, you will be prompted to set up and measure the reference standards. Follow the software instructions and set up the black reference first, then the white reference on the measuring point. Start the reference measurements by clicking on the black or white button next to Measurement or by pressing the measurement button (lights up green) directly on the top of the device.

**Note:** Please always use the black adapter ring. The measurement of the references will be requested again by the software after approx. 60 minutes.

## Output of the result

After a few seconds, the THC and CBD content of the cannabis flower are displayed. In addition, it is shown whether it is a THC-dominant type, a CBD-dominant type, a THC/CBD-intermediate type or whether it is an undefined result, if the measurement result cannot be categorised into a product group.

## Measurement specifications

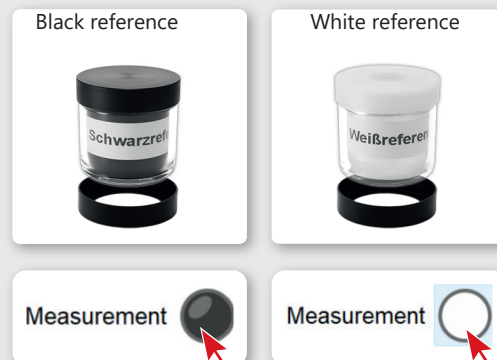
After the measurement, complete all mandatory fields (outlined in red) under **Sample** and under **Pharmacy > Tester**. If required, you can fill in the fields **PZN**, **quantity purchased**, **supplier**, **use by date**, **delivery date** and **comment**.

**Note:** If you fill in the Period of grace field, the software calculates it from the day of the check and indicates it as „Expiry date“ on both the test report and the test label. If the Expiry date is earlier than the Period of grace, the expiry is automatically printed on the test report or test label.

## Creating the protocol

Now you can save the measurement result, view the test report as a PDF file, or print it out.

**Note:** No matter which functions you select, the measurement result will be saved in any case. In addition, you may also print your test label on your label printer.



Result	Name	Cannabis flower (THC-dominant type)		
	THC	16.7% ± 5.8% (wt)	CBD	9.8% ± 2.2% (wt)
	Comment	<input type="text"/>		
	Comments:	Macroscopy: The female inflorescences are undivided or have disintegrated into their individual parts. The densely packed... <a href="#">Recommendation</a>		

PPN	<input type="text"/>	Variety	<input type="text"/>
Producer	<input type="text"/>	Expiry date	<input type="text"/>
Batch	<input type="text"/>	Grace Period	<input type="text"/>
Quantity	<input type="text"/>	Content	<input type="text"/> % THC <input type="text"/> % CBD
Supplier	<input type="text"/>	Delivery date	<input type="text"/>

Report [Save](#) [PDF](#) [Print](#) [Print Label](#) 240716-152048

### 3. Cleaning/use of sample jars, measuring point

#### Sample cups

- Pre-clean sample cups with a paper towel after the measurement
- Cleaning with rinsing agent, warm water and a soft cloth
- Next, rinse the sample cups with purified water and rub them dry with a lint-free cloth
- Before using the sample cups, sterilise them with 70% isopropyl alcohol and dry them with a disposable cloth

**Before measuring, particularly check that the bottom of the cup is clean and not greasy. No water marks should be visible.**

#### Measurement point / sample window

Please ensure that the measurement point (sample window) of the Apo-Ident is kept clean. For cleaning, we recommend a cloth soaked in 70% isopropyl alcohol.

### 4. Additional functions

#### 4.1. Search function (query) by substance, expiry date or other criteria

This function allows you to re-display and re-print reports or labels.

To do this, click on **<Query>** in the menu bar. The Archive Query opens.

If necessary, set the configuration profile for the search query above. Under the Substance tab, enter the name of the substance (or the test number or PPN) whose test reports you would like to search for. Click on **<Execute>**. All test reports containing the specified search text are displayed.

To search for the expiration date, click on the **Use-by Date/ Shelf Life** tab and enter the relevant dates.

After executing the query, you can select the substance in question in the results window and display information about the measurement or the report.

Under the **Advanced tab**, you can also search for the user, supplier or a batch number.

In the **timestamp** query, you may, for example, select all measurements for query starting from 01/01/2010.

#### Exporting the query results in CSV format

The results of the query can be saved in CSV format by clicking on **<Save>**. Then open it in a CSV-enabled program (e.g. MS Excel) to print out the list or use it for further processing.

#### Copy files to individual storage locations

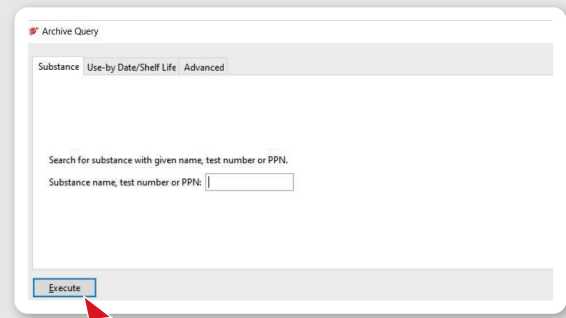
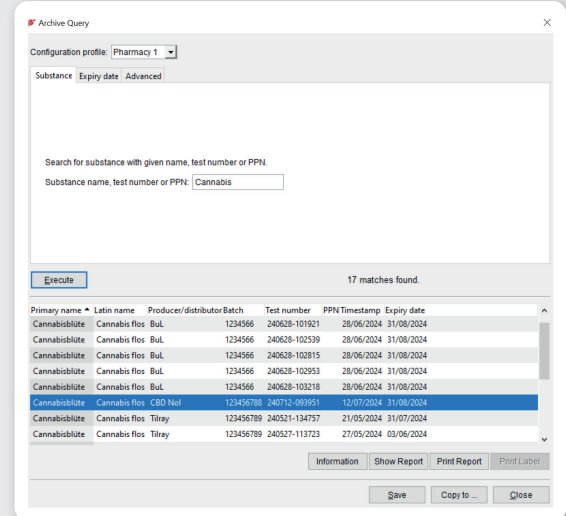
(e.g. on a USB flash drive)

If you would like to copy the selected files to an individual location, please click on the **<Copy to...>** button and select the desired storage location. All data matching the search criteria is copied.

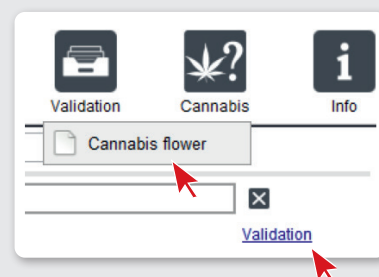
#### 4.2. Display of the validation documents

Click on **<Validation>** in the menu bar. The validation documents are divided according to substance classes. Here you display the entire document.

After entering the substance to be tested, you can also open the validation document directly via the Apo-Ident user interface. To do this, click in the **Substance** area on the far right on **Validation**.

Primary name	Latin name	Producer/distributor	Batch	Test number	PPN	Timestamp	Expiry date
Cannabidiol	Cannabis flos	Bul.	1234566	240628-101921		28/06/2024	31/08/2024
Cannabidiol	Cannabis flos	Bul.	1234566	240628-102339		28/06/2024	31/08/2024
Cannabidiol	Cannabis flos	Bul.	1234566	240628-102815		28/06/2024	31/08/2024
Cannabidiol	Cannabis flos	Bul.	1234566	240628-102953		28/06/2024	31/08/2024
Cannabidiol	Cannabis flos	Bul.	1234566	240628-103218		28/06/2024	31/08/2024
Cannabidiol	Cannabis flos	CBD Nol	123456789	240527-113723		12/07/2024	31/08/2024
Cannabidiol	Cannabis flos	Tilley	123456789	240521-134757		21/05/2024	31/07/2024
Cannabidiol	Cannabis flos	Tilley	123456789	240527-113723		27/05/2024	09/06/2024





### 4.3. Cannabis-Button

#### 4.3.1. Operating instructions

Under **<operating instructions>** you will find the detailed operating instructions for the Apo-Ident analyser for safe handling of Apo-Ident.

#### 4.3.2. Data backup

To send your measurement reports to the Apo-Ident customer service or to save them for the purpose of data backup, click on **<Cannabis>** at the top of the menu bar and select **<Data backup>**. You can now choose whether you would like to perform a **<backup>** or export data for our **<Customer Service>**.

If you want to change computers, it is advisable to make a backup (export including log files, licence key, profile). The backup contains the settings, archive(s) and profile(s).

Click on **<Save>**. By default, the appropriate zip archive is saved on the desktop.

When you export the data for customer service, your spectra are compressed and saved in a ZIP file. You can set the number of measurement days for which you would like to combine and send or save as follows:

- -1 = all days
- 0 = only LogFiles
- 1 = 1 day
- 2 = 2 days
- etc.

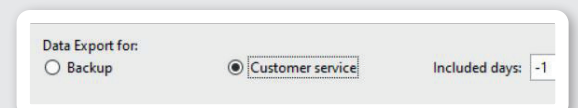
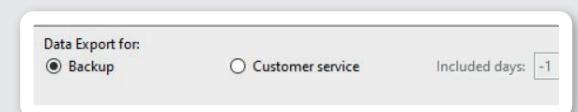
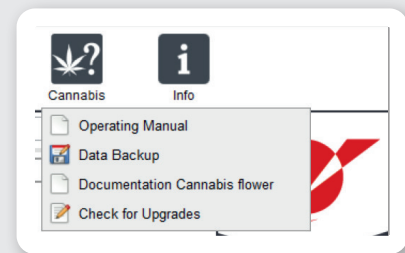
Click on **<Save>**. By default, the appropriate zip archive is saved on the desktop. You can now send the data to us via e-mail to [kundenservice@apo-ident.de](mailto:kundenservice@apo-ident.de)

#### 4.3.3. Cannabis flower documentation

Under **<Documentation cannabis flower>** you will find the document for macro and microscopic examination.

### 4.4. Info

Here you can obtain information about the installed version or display the **<certificate>** for the currently installed software.





## 5. Technical specifications and disposal

### 5.1. Technical specifications of Apo-Ident 2.1

Analysis method	Near-infrared spectroscopy
Spectral range	1000 - 1900 nm
Spectral resolution	10 nm
Diffuse light	< 0.2 %
Measurement time	< 15 s per Scan
Detector	InGaAs single detector, not cooled
Wavelength accuracy	$\pm 1$ nm (over the entire temperature range)
Wavelength reproducibility	$\pm 0.3$ nm (over the entire temperature range)
Photometric reproducibility	$\pm 0.15$ % (average of 500 scans at 25 °C)
Photometric linearity (max/RMS)	< 2 % / < 1.5 %
Automatic recalibration/unit test	Integrated wavelengths and white standard
Light source	Tungsten-halogen burner
Probe/optical input	Diffuse reflection, measuring spot with 23 mm diameter (powders, scattering solids, with transmittance insert for liquids and pastes)
Dimensions	185 x 192 x 220 mm
Weight	2.95 kg
Interfaces	1 x USB Typ B Slave
Interfaces aiLINK (optional)	<ul style="list-style-type: none"> <li>• 2 x USB 2.0 Typ A Host</li> <li>• 2 x USB 3.0 Typ A Host</li> <li>• Wifi 2.4GHz IEEE 802.11ac</li> <li>• 1 x Gigabit Ethernet</li> <li>• 1 x HDMI2.0 Typ A to 4k/30Hz</li> </ul>
Operating temperatures	15 - 35 °C
Storage temperature range	-20 bis 60 °C (non-condensing)
Operating voltage Apo-Ident 2	12 VDC - 3.35 A - 45 W
Operating voltage external power supply	100 - 240 VAC/50-60 Hz/60 W
Software	QuickStep Apo-Ident software for recording and visualising spectra
System requirements	<ul style="list-style-type: none"> <li>• PC with Windows 10 and 11</li> <li>• min. 4 GB RAM</li> <li>• min. 1.6 GHz Pentium</li> <li>• 0.5 GB storage space</li> </ul>



The device complies with the following EC directives

- EMV Directive 2014/30/EU
- Low-voltage Directive 2014/35/EU
- RoHS-Directive 2011/65/EU
- EMV 2014/53/EU (RED)

### 5.2. Disposal



According to the European WEEE Directive, electrical and electronic equipment should not be disposed of with household waste. Their components must be recycled or disposed of separately, because toxic and hazardous components may cause sustained damage to health and the environment if disposed of improperly.

In accordance with the Electrical and Electronic Equipment Act (ElektroG), you are obliged to dispose of electrical and electronic equipment properly at the end of their service life. If in your company you have not implemented any procedure for this, HiperScan GmbH will take the device back as the manufacturer.

Please do not hesitate to contact us if you have any questions.



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