



Doculus Lumus® User Manual

charismaTec OG

“See the Truth Inside ...” in 30 seconds

Doculus Lumus® is designed in cooperation with document specialists from the Austria and many other document experts from all over the world.

Border guard officers and all people who have to check official documents use the mobile document checking device Doculus Lumus® to prove the documents authenticity.

Experienced document specialists know what they need to look for. Often the place where fake documents are analysed in more detail is an office far away from the border posts. So fake documents must be identified by the frontlines at the border, on the motorway, on the train or at the airport. Usually only 30 seconds are available for the examination of a document and to decide whether a fake is present or not. Frontline counts!



Your new Doculus Lumus®

Congratulations for purchasing your new mobile document checking device Doculus Lumus® which is available in several unique versions and colours.

Package Contents



- Mobile document checking device
- 1 pair of AAA batteries
- 1 hand strap
- 1 lens cleaning cloth
- 1 Doculus Lumus® business card to share
- 1 Quick Guide

Optional Accessories



- Robust belt bag for the device including a side pocket
- Extra pocket for a set of spare AAA batteries
- Extra coloured cover (lime, red, grey, violet, blue, magenta, orange, sand, olive)



- Rechargeable batteries incl. charger

Doculus Lumus® standard functions

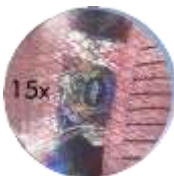
- 15x/22x magnification with quality glass lens system
- Field of view: 15x Ø 20 mm | 22x Ø 15 mm
- Extra robust housing: downfall resistant 1,5m
- 4 LEDs for incident light including a torchlight mode
- 4 UV-LEDs with 365 nm extra strong
- 8 LEDs oblique light, with manual and automatic rotating light
- Changeable between right- or left-handed mode
- Steady light mode for photo documentation purposes
- Auto power-off functionality
- Constant LED brightness due to intelligent energy management

Doculus Lumus® versions and their options in detail

(all functions above are always included)

15x / 22x DL	RFID Quick Check
15x / 22x DL Coll	No RFID Quick Check
15x / 22x DL+	Mini Front UV Torch (UV 365 nm), RFID Quick Check
15x / 22x DL+ Coll	Mini Front UV Torch (UV 365 nm), No RFID Check
15x / 22x DL+ IR	Mini Front UV Torch (UV 365 nm), RFID Quick Check Infrared Laser (980 nm) for Anti-Stokes features
15x / 22x DL+ Li	Mini Front UV Torch (UV 365 nm), RFID Quick Check Integrated Li-Ion battery / AAA battery operated
15x / 22x DL+ IR Li	Mini Front UV Torch (UV 365 nm), RFID Quick Check Integrated Li-Ion battery / AAA battery operated Infrared Laser (980 nm) for Anti-Stokes features

15x Magnification



22x Magnification

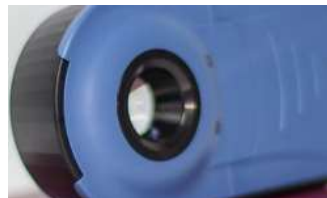


Table of Contents

1. Safety Instructions	6
General Hazards	6
Optical, Electrical and Mechanical Hazards	7
Environmental Conditions	10
Disposal	10
Declaration of Conformity	10
2. Initial Start-Up	12
Attaching the hand strap	12
Insert new batteries	12
Option: Operating with Li-Ion battery	13
Right-handed /Left-handed Mode	14
3. Button Functions and Areas of Operation	15
Incident Light Mode	15
UV Light Mode	16
Oblique Light Mode and Rotating Oblique Light	16
Torchlight Mode	18
Option: UV Torchlight Mode	19
Option: RFID Transponder Quick Check	20
Steady Light	22
Photo Documentation Mode	23
Option: IR Laser for Anti-Stokes features	24
4. Energy Management	26
Battery Level	26
Charging Li-Ion battery	26
Automatic Power-Off	26
Constant brightness	26
5. Service and Maintenance	27
Service and Warranty	27

When and where to use Doculus Lumus®

You are the expert! Doculus Lumus® is a high-quality mobile document checking device with which it is possible to identify falsifications in less than 30 seconds!

The device helps you to check travel documents, driving licenses, banknotes, signatures and similar items for authenticity, whether you are in a train, a car, a plane or even on the countryside. Different light modes reveal the security features very well. Doculus Lumus® is available in different versions which support best all kind of document experts around the world.

1. Safety Instructions

Explanation

DANGER: Indicates a hazardous situation that, if not avoided, will result in death or serious injury.

WARNING: Indicates a hazardous situation that, if not avoided, could result in death or serious injury.

CAUTION: Indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.

NOTICE: Indicates information considered important but not hazard related.

The following safety and danger information is not only for protecting the device, but also your health. You will find specific information in the following chapters of this manual. charismaTec OG shall not be held liable for any manual damages. Please read all statements carefully!

General Hazards

WARNING: Endangerment of children and other persons! Improper usage can lead to injuries and damage of property

This product and its package is no toy and may not be used by children. Children cannot assess the hazards that can result from operating electrical appliances and/or packaging material. Always take care to keep the product and the package out of the reach of children. Batteries and accumulators may not be in children hands. Leaked or damaged batteries or accumulators can cause cauterization when touching them.

Optical, Electrical and Mechanical Hazards

Endangerment by optical radiation and UV radiation (explanation of risk group marking and explanation corresponding to norm IEC 62471:2006 and supplementary sheet 1 IEC 62471-2:2009) as well as laser radiation (explanation corresponding to norm IEC 60825-1:2014)

WARNING: Improper handling with LED light and UV radiation can damage your skin and your eyes!

Do not directly look into the LED light. Continuous strong white light can damage your eyes. Direct UV radiation irritates and damages the eyes (danger of blindness) and the skin (danger of burning and/or induction of skin cancer).

WARNING: UV radiation from this product. Exposition can lead to irritation of eyes or skin. Aim light source only to documents or use suitable shielding!

WARNING: Possibly dangerous optical radiation. Do not look into the lamp for a longer period during operation. Can be dangerous for the eyes!

Endangerment can occur through ultraviolet radiation by improper usage of the device, as well as an endangerment of the retina through blue light. For this device the risk group 2 has been determined, if somebody looks directly from a very short distance into the light source from the wrong side (device held upside down and directly in front of the eyes). Always avoid longer glimpses into the light sources as well as longer exposures of the skin without protection. At correct handling the device is photobiologically safe.

UV radiation is not visible for the human eye, even at full power the UV LEDs only shimmer slightly blue violet. A function test and the examination of the light intensity can be done easily by aiming the light at white standard paper (no security paper) or white cloths. The optical lighteners are stimulated strongly by the UV light.

WARNING: Invisible laser radiation (980 nm) – laser class 3R. Avoid direct irradiation of the eyes. Do not expose your eyes or skin to the laser beam!



Optionally, the device has a laser with invisible radiation in the near infrared range (wavelength 980 nm). This laser radiation is dangerous for eyes and skin! Be careful not to look into the aperture on the bottom of the unit. This device may only be used by appropriately trained personnel. Use the device only on flat documents and ID cards, the opening must be completely covered by the document being examined. When the laser is active (red LED on the top of the device lights up permanently), always hold the device horizontally with the opening facing downwards. Never point the bottom of the device at people. The buttons to activate the laser must not be clamped under any circumstances.

Whether you have a device with or without the Anti-Stokes laser in front of you is indicated by the printing on the side of the housing (laser warning symbol) and by the note “IR” on the label in the battery cover and on the packaging.

**WARNING: Endangerment of objects and persons!
Improper usage can lead to a burning glass effect.**

Devices that are not in use have to be covered with a protective cover or have to be kept in a light tight container to prevent the inflammation of objects by focused sunlight.

WARNING: Endangerment by magnetic field!

This device generates a weak magnetic HF field (13.56 MHz) during operation. Please keep some distance to other electronic and especially medical devices. Special caution is necessary at heart pacemakers and implanted defibrillators as well as with hearing aids.

WARNING: Exhaustion of the eyes!

Certain persons may have a feeling of exhaustion or discomfort after longer usage of magnification systems. Please observe the following remarks to prevent your eyes to become exhausted:

Independent from your feeling you should take a break of 10 to 15 minutes each hour.

If you feel some discomfort while using the device or after a longer time, interrupt working with the device and consult a doctor.

CAUTION: Risk of damage by misuse!

Improper usage of the device can lead to damages.

- The device is not water resistant! Do not immerse the device into water and protect it from water (rain or sea water).
- Do not reach into the device while operating it and do not insert anything into the case.
- Do not open the device. Improper intrusion can impair the functionality of the device.
- Use the device only for document checking purposes. Other types of usage can lead to damage of the device.
- Do not expose the device to extreme heat or cold.
- Do not use cleaning sprays, aggressive, alcohol-containing or other inflammable solutions.

CAUTION: Danger of explosion at improper exchange of the batteries!

Pay attention on the correct polarity (plus pole + / minus pole -) of batteries or accumulators. Remove batteries and accumulators if the device is not used for a longer time. Always replace the pair of batteries at a time. Do not short circuit batteries and accumulators.

NOTICE: Disposal of used batteries as directed!

Do not dispose batteries and accumulators with normal household waste, they should be disposed to collecting containers which are available at every battery vendor. If there is no collecting container near your location, you can also dispose batteries and accumulators at the hazardous waste collection centre of your municipality or send them to us.

Environmental Conditions

The device may only be operated within the allowed scope of environmental conditions:

- Surrounding temperature: -20 to +55 °C (approx. 0 to 130 F)
- Humidity: ≤ 80 % relative humidity, non-condensing

Disposal



Within the EU the device and its accessories have to be collected and disposed separately. Devices that are marked with the crossed-out bin on wheels may not be disposed with normal household waste. Please contact your dealer or dispose the products at the electronic waste collection centre of your municipality.

Declaration of Conformity

CE Declaration

Herewith the manufacturer of the device declares that this device conforms to the requirements and all other policies. A copy of the entire declaration can be provided on demand.

RoHS Conformity

The product conforms to the requirements of the RoHS directive on the reduction of hazardous substances.

FCC Notice

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communication. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help

THIS DEVICE COMPLIES WITH PART 15 OF 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 UNDESIRE OPERATION

WARNING: CHANGES OR MODIFICATIONS NOT EXPRESSLY APPROVED BY THE PARTY RESPONSIBLE FOR COMPLIANCE COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.

Industry Canada / Industrie Canada

This device complies with Industry Canada licence-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.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

2. Initial Start-Up

Please read the following information to operate Doculus Lumus® for the first time. For your safety, please read the above safety instructions on the usage of the device.

Attaching the hand strap

Take the hand strap out of the packaging box and attach it at the location in the rear part of the device by threading the thin end through the eyelet and then threading the whole strap through the loop.



Insert new batteries

Attention! Make sure that the batteries are inserted correctly in the device battery holder!



The supplied batteries must be properly inserted in the device. Please always insert the batteries with the positive and negative pole in the correct direction. Inserting batteries the wrong way is dangerous and is not covered by the guarantee.

The device operates with two AAA/LR03 batteries with 1.5 volts each. Always use alkaline batteries! The usage of accumulators or rechargeable batteries is possible but could result in incorrect indication of low batteries.

Slide the battery cover outside and then tilt it upwards.



Insert the two AAA batteries that came with the device. Always pay attention to the correct polarity of the batteries corresponding to the markings within the device. The plus poles of the battery (marked with a “+”) should match the “+” marking near the battery clips.

Dispose the old batteries with normal household waste or check your country regulations if batteries must be recycled or dropped off at a designated facility.

Option: Operating with Li-Ion battery

The device version **Doculus Lumus®+ Li** operates with integrated pre-loaded Li-Ion battery and also alternately with two AAA/LR03 batteries with 1.5 volts each. Use the Li-Ion battery until it is empty, afterwards you can use standard AAA batteries as described in the chapter above until you can charge the Li-Ion battery. More details on how to charge the Li-Ion battery are described in the chapter “Energy Management“.



Right-handed /Left-handed Mode

By default, the assignment of keys is prepared for right-handedness. In most cases left-handed persons would like to operate incident light, UV light and torchlight with the thumb. To enable this, please conduct the following steps:

1. Shortly press all 4 buttons simultaneously to activate the test and setup mode
2. Then keep the oblique light button held for a few seconds until the light test has finished. The green LED will be kept on shortly to indicate that the setting has been saved.
3. Now you can use the device with the left hand and can operate the incident light with the former oblique light button. All other buttons are mirrored similarly.



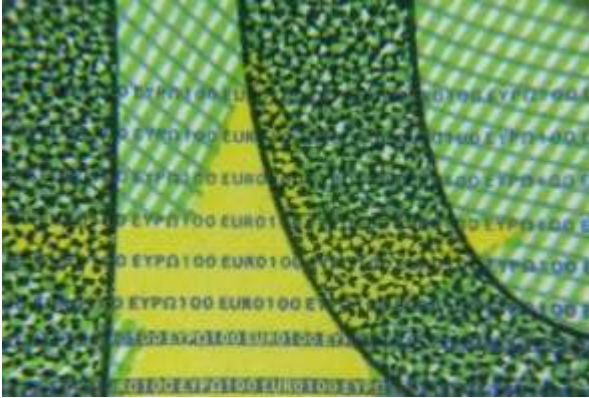
To reset the device to right-handed mode, please conduct the steps again but now keep the original incident light button pressed until the end of the test.

3. Button Functions and Areas of Operation

Always place the device directly onto the document to be checked and move your eye very close to the lens to obtain an optimal and distortion-free image.

Incident Light Mode

Incident light with 4 strong LEDs (bright field illumination) allows you to check even the finest printed details like microtext or nanotext.

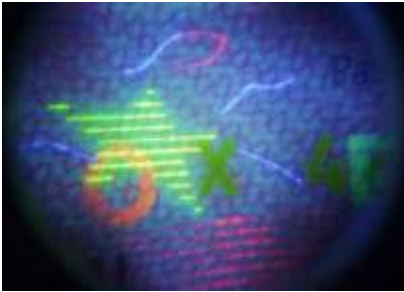


Use your thumb to press the incident light button with the downward pointing rays to activate incident light mode. Check the chapter “Steady Light Mode” to keep the light on for 1 minute.



UV Light Mode

The UV light mode with its 4 strong UV LEDs (365 nm) allows an optimal depiction of UV security inks through the lens as well as from the side from short distance.



Press the UV light button marked with a sun symbol with your thumb to activate UV light mode. Check the chapter “Steady Light Mode“ to keep the light on for 1 minute.



Oblique Light Mode and Rotating Oblique Light

The oblique light mode allows you to identify intaglios, embossing and colour changing holograms. With the aid of 8 LEDs that successively shine on the document in 45° steps, shadows are created at heightened or deepened features (dark field illumination). Colour changing elements look different depending on the angle of light incidence.



Use your forefinger on the oblique light button marked with a ring to activate the oblique light mode. Oblique light starts “on top” at the 12 o'clock position. To run through all 8 oblique light positions successively additionally press one of the buttons on the other side marked with an arrow. Press the right or left arrow button once to move the light one position further clockwise or counterclockwise. Keep the corresponding arrow button pressed to move the light further automatically.



Check the chapter “Steady Light Mode“ to keep the light on for 1 minute.

Torchlight Mode

In certain situations, e.g. at bright sunshine, the normal incident light mode may be too dark. You will need a higher light intensity to shine through watermarks as well. The torchlight mode allows an optimal illumination even in a very bright surrounding. In dark environment use this mode as a torch replacement for illuminating close objects.

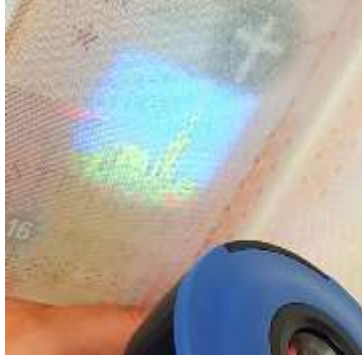


Use your thumb to press both incident light and UV light button. You start with the incident light button and then let your finger slip to the UV button to activate torchlight mode. Check the chapter “Steady Light Mode” to keep the light on for 1 minute.



Option: UV Torchlight Mode

The UV Torchlight with an extra strong 365nm UV LED in the front of the device allows a quick and easy check of UV security inks and fibres from a distance.



Use your thumb to press both UV light and incident light button. Start with the UV button and then let your finger slip to the incident light button to activate UV torchlight mode. Check the chapter “Steady Light Mode” to keep the light on for 1 minute.



Option: RFID Transponder Quick Check

The RFID transponder quick check allows verifying the transponders that are integrated in passports or ID cards. Therefore you can check authenticity, proper function and transponder type in a second. Please keep in mind that in some passports a shielding prevents reading from outside. Just open the document to check it from the inside.



When you press the RFID button (with a symbol similar to a radio wave) the electromagnetic field is activated and the red LED blinks rapidly. As long as you keep the button pressed the device searches for RFID transponders near it (distance from device bottom to the document max. 3 cm to 5 cm, about 1 inch to 2 inches). If a transponder is found, the electromagnetic field is turned off to save energy. The result of the check is indicated as long as you keep the button pressed. Press the RFID button again to start a new search and check.



Explanation of the light codes:

- **Red light blinks rapidly:**
The device searches for a RFID transponder
- **Green light blinks 1 x recurring:**
An RFID ISO 14443 Type A transponder for valid ICAO documents was found
- **Green light blinks 2 x recurring:**
An RFID ISO 14443 Type B transponder for valid ICAO documents was found
- **Red and green light blink 1 x recurring:**
An RFID ISO 14443 Type A transponder for valid ID cards was found
- **Red and green light blink 2 x recurring:**
An RFID ISO 14443 Type B transponder for valid ID cards was found
- **Green and Red lights blink alternately:**
A transponder was found, but it is no valid passport transponder, e.g. a bank card, credit card or employee card
- **Red light blinks 3 x slowly, although the RFID button has not been pressed or released:**
This has nothing to do with RFID, it just shows that battery is low (see subchapter “Battery Level“)

Steady Light

The steady light function is very useful if you want to take a snapshot through the lens with your cell phone or smartphone camera or you do not want to keep the button pressed with your finger.



Press any of the light buttons 3x quickly to activate the steady light function. Steady light stays on for 1 minute if you do not press another button.

Steady Light is available for all light modes except optional Anti-Stokes-Laser:

- Incident light mode
- UV light mode
- Oblique light mode: After you activated the steady light function for oblique light, you can use the left and right arrow buttons as usual to change the illumination angle.
- Torchlight mode: Keep pressing the incident light button and then press the UV light button next to it 3 times rapidly.
- UV-Torch-Mode: Keep pressing the UV light button and then click the incident light button next to it 3 times rapidly.

Photo Documentation Mode

Place the battery cover in the documentation position to place your mobile phone horizontally on the Doculus Lumus®.

Firstly, slide the battery cover of the device outwards to open it slightly. Then lift it up a little and push it into the raised position. To do this, push on the middle of the battery cover and push it inwards at the same time to lock the lid in place.



Photo documentation does not require an additional app on your smartphone. Just use the standard camera application on your smartphone.



Option: IR Laser for Anti-Stokes features



To operate Doculus Lumus® with IR laser (980 nm) for Anti-Stokes features please read this chapter carefully. For your safety **never** look into the laser at the opening on the bottom of the device while the laser is active.

For safety reasons, there is no steady light mode for this function.

A device which is equipped with an IR Laser is indicated by the printing on the side of the housing (laser warning symbol) and by the note “IR” on the label in the battery cover or on the product packaging.

For the Anti-Stokes effect, named after the physicist Sir George Gabriel Stokes, printed fluorescent particles of rare earths are irradiated with a strong light source with higher wavelength. The laser is used for this purpose with invisible infrared radiation in the near range at 980 nm. The particles emit radiation in the range of lower wavelengths, so there is a shift into the visible range. Most of the particles shine yellow or green, but other colour shades are also possible.



Activate the laser

Always place the device directly and plane onto the document to be checked. The laser exit opening on the bottom of the device must be completely covered for safety reasons.

Use your index finger and your middle finger to push the oblique light button (circle symbol) and the RFID button (radio wave symbol) at the same time. This key combination was intentionally elaborately chosen to prevent accidental operation.



When the IR laser is activated, the red LED on the top of the device is active permanently.

The laser radiation itself is invisible to the human eye, so rely on the red LED to check the function and never look into the device from the bottom while the laser is active. If you cannot detect any effect on the document, you look at a spot without particles.

4. Energy Management

Doculus Lumus® is equipped with intelligent energy saving technology, which allows operating the device for a few months with 1 set of batteries.

Battery Level

The red LED blinks 3 times slowly after releasing a button if battery is low. Please plan to change batteries soon and carry a set of replacement batteries with you.

If the energy in the batteries is too low for proper function of the device, the red LED starts to blink at a button press and the light functions remain switched off.

Charging Li-Ion battery



To charge the Li-Ion battery plug a micro-USB cable into the socket. During the charging process the red LED inside the device is on. The LED is off when the Li-Ion battery is fully charged.



Automatic Power-Off

If some button is pressed inadvertently (e.g. in a case) or the steady light function has been activated, the device turns off after 1 minute to prevent the batteries from being drained.

Constant brightness

By using state-of-the-art microprocessor technology and an electronic current regulation system, the brightness of the LEDs remains constant, regardless of battery level (patent pending).

5. Service and Maintenance

- Clean the device only with a soft moist cloth. Do not use any detergents or solvents since they could damage the device or leave stains on the plastics.
- Clean the lens system only with the accessory lens cleaning cloth or a lint-free soft cloth. You can remove fingerprints or fatty stains with a cotton bud soaked with isopropyl alcohol.
- If you move your device from the cold into a warm room, condensate water can blur the lens. Please wait until the lenses are free again before operating the device.
- If the device got moistly or wet, please remove the batteries and let the device dry at least for a day before operating it.

Service and Warranty

You purchased a high-quality product of charismaTec OG that is produced under a strict quality inspection. If there are still some problems with the product or if you have some questions about the usage of the product you will find all contact information on the homepage www.doculuslumus.com.

charismaTec OG grants a warranty of 24 months after the date of purchase on material and production of Doculus Lumus®. The customer has the right to get rework. charismaTec OG may, instead of reworking, deliver replacement devices. Exchanged devices pass into the ownership of charismaTec OG. Warranty is void if the device is opened by the buyer or other non-authorized third parties. Damages that arise through improper handling, usage, storage or act of nature or other external influences will not be protected by warranty.




charismaTec

charismaTec OG
Sandgasse 25a/5
8010 Graz, Austria

Office:

Schmiedlstraße 16
8042 Graz, Austria
Phone: +43 316 424244
Hotline: +43 664 8818 6990

office@charimatec.at
www.charimatec.com
www.doculuslumus.com