OZO

MAKING VIRTUAL REALITY

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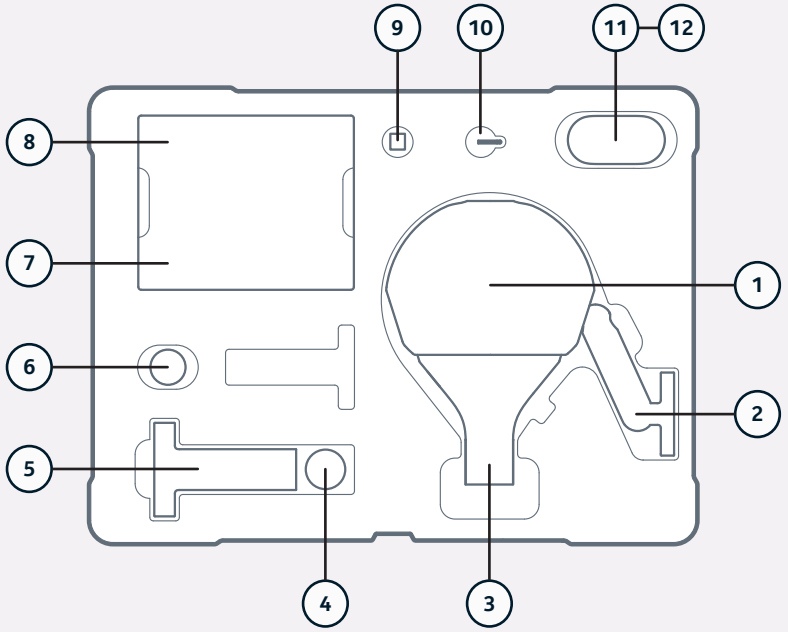
Box Content



1. Protective Cover (comes fitted to camera)
2. Large tripod adapter (comes fitted to camera)
3. OZO Professional VR Camera PC-01
4. Media Cable MC-01, for USB3 data transfer to computer directly from Media Module or cartridge in Docking Station.
5. Docking Station DS-01, for battery charging and data transfer
6. Small tripod adapter
7. Camera External AC power supply and AC cables
8. Docking Station AC power supply and AC cables
9. 3G-SDI adapter card in protective ESD bag, for external recording/ monitoring
10. T6 tool, for removing Connector Cap of power/SDI slot
11. Digital Cartridge DC-01, including 33Wh Li-Ion rechargeable battery
12. Media Module MM-01, including 500GB solid state storage

The Protective NANUK 950 carrying case is intended for normal transportation of OZO and included accessories. Please keep the cardboard shipping box and packing, and reuse when transporting the camera by courier or shipping agent.

NOTE: Due to the size the case should travel as hold luggage when flying with OZO but the cartridges (containing Li-Ion batteries) should be removed and carried as hand luggage according to international regulations.

WARNINGS

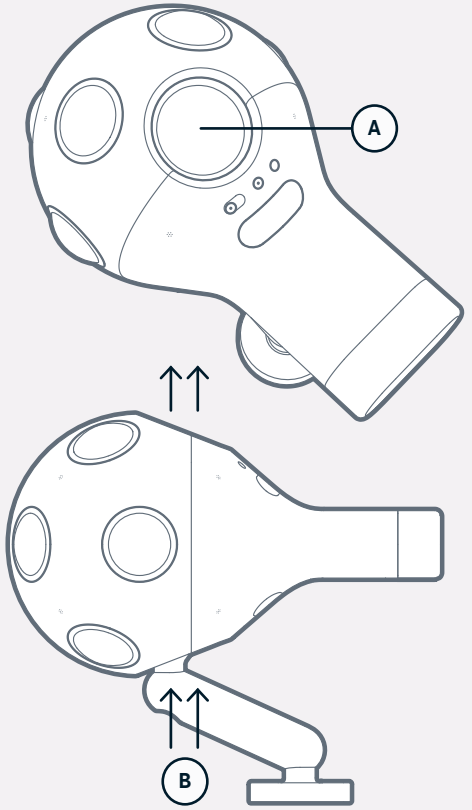
Ventilation

Do not cover the ventilation opening (A).

The Device is cooled by air flowing between the outer and inner structure.

Keep the device ventilation upright (B).

Covering the opening or mounting the device in a way that the openings are not vertically on top of each other would prevent the air from flowing.



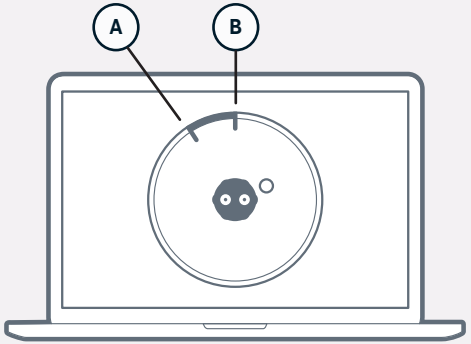
Overheating

Capture or broadcast will stop on overheat

The Device is protected against overheating by switching to standby when the temperature of the device exceeds a set limit **(A).**

Switching to standby discontinues any kind of capturing because the sensors are powered down.

If the temperature continues to rise even after switching to standby a second threshold triggers full shutdown **(B).**



Do not use near heat sources.

These may cause the device to overheat, and stop capture.

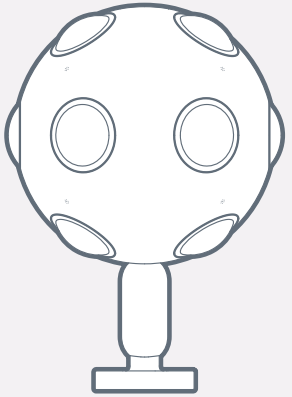
Operating and Storage Temperature

Operating Temperature

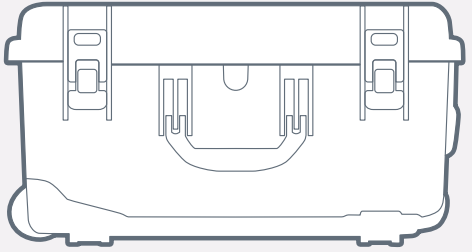
The device should only be used between +32°F and +77°F (0°C and +25°C). Do not use outside this range.

Storage Temperature

The device should be stored between -4°F and +122°F (-20°C and +50°C). Do not store outside this range.



+32°F / +77°F **0°C / +25°C**



-4°F / +122°F **-20°C / +50°C**

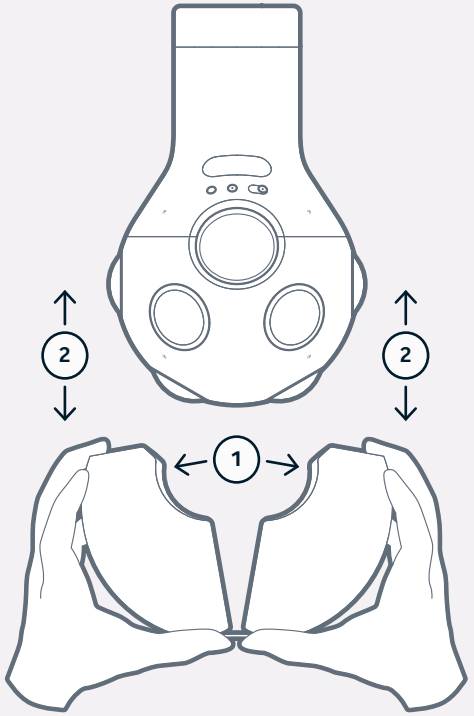
Protective Cover

Do not remove the protective cover until the device is fully mounted.

Keeping the protective cover on the device for as long as possible decreases the risk of lens damage significantly.

To remove or attach the cover, open it only the necessary amount.

Avoid contact with the lenses as much as possible.



Safety and Handling

Handle with care

The device weight is 4.2 kg (9.3 lbs) including the digital cartridge.

Do not lift the device by holding the protective cover or cartridge.

Do not manipulate the device without the protective cover.

Care should be taken when moving the device.

Do not place or mount the device on unstable objects.

To avoid damage to the device, remove and insert the Digital Cartridge according to the instructions given in the section “Cartridge replacement” p. 21.

To avoid damage to the 3G-SDI card, attach and remove SDI cables according to the instructions given in the section “Attaching SDI DIN cable” p. 19.

Mount correctly

The device must be mounted securely before use according to the instructions given in the section “Mounting” p. 16.

Failure to mount securely could cause damage to the device, or injury.

Specific tools and the correct amount of torque must be used when changing the tripod adapter.

Do not place or mount the device on vibrating or oscillating objects as this may cause mechanical failure.

Do not drop the device

If the device is dropped, it may be damaged or modified externally or internally and become unusable for the intended purpose.

After dropping, in case of damage or incorrect operation, please contact the manufacturer for (non-warranty) repair. Take care to avoid injury if glass lenses become broken.

Battery

Do not disassemble or open, crush, bend or deform, puncture, or shred.

Do not modify or remanufacture, attempt to insert foreign objects into the battery, immerse or expose to water or other liquids, or expose to fire, explosion, or other hazard.

Only use the battery for the system for which it was specified.

Only use the battery with a charging system that has been qualified for use with the system. Use of an unqualified battery or charger may present a risk of fire, explosion, leakage, or other hazard.

Do not short circuit a battery or allow metallic or conductive objects to contact the battery terminals.

Please contact the manufacturer for (non-warranty) repair to replace the battery with another battery that has been qualified with the system. Use of an unqualified battery may present a risk of fire, explosion, leakage, or other hazard.

Do not insert a fully charged battery into the charger repeatedly. Due to the high initial charge, the battery could be overcharged which could lead to damage to the battery and to the battery charger.

Promptly dispose of used batteries in accordance with local regulations.

Battery usage by children should be supervised.

The battery should only be charged or used by a compatible device or charger, and will fail to operate if inserted to an incompatible system.

Avoid dropping the battery. If the battery is dropped, especially on a hard surface and you suspect damage, take it to a service center for inspection. Improper battery use may result in a fire, explosion, or other hazard.

Water / humidity

Do not use in or near water. The device is not waterproof, and may be damaged if used underwater, in rain, or in environments with high moisture or humidity.

Repairs / opening the device

Repairs should be performed only by qualified service personnel. Do not attempt to open the device, as this may cause damage which will void the warranty.

Power source

Use only the supplied power sources. Take precautions when handling power plugs. Do not use with power outlets or extension cords if they are overloaded, dusty, wet or physically damaged.

Cables

Do not use the supplied USB cable to directly connect two computers, as this may cause damage. Do not walk or step on cables. Do not place heavy objects on cables. Do not twist cables.

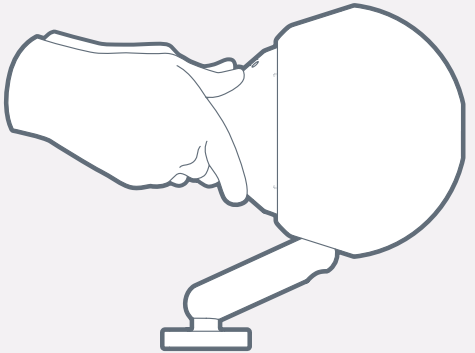
BASICS

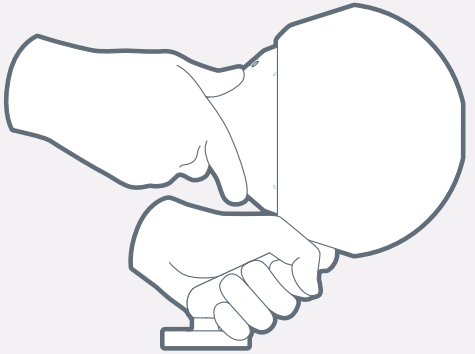
Device Handling

This is the most reliable way of handling the device.

Lift the device at the “tail” applying a firm and safe grip.

Additionally you can hold the device by the OZO Tripod adapter if it is properly attached.





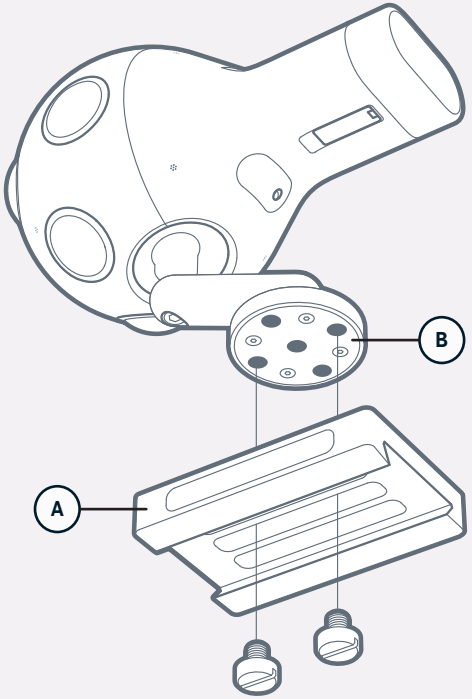
Mounting

Securely mounting a base plate (A) to the tripod adapter (B) is recommended.

The Device is delivered with the large OZO Tripod adapter attached.

The large OZO tripod adapter includes 5 x standard 3/8” tripod mounting hole.

The included alternative small OZO tripod adapter includes 1 x standard 3/8” tripod mounting hole.



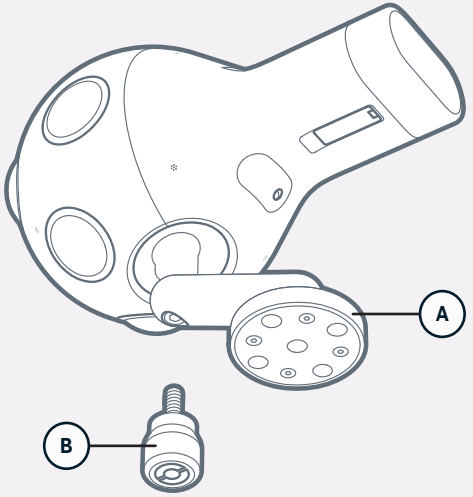
Changing the Tripod Adapter

Specific force is required to ensure the newly-attached tripod adapter is securely fixed.

1. Carefully remove the mounted adapter **(A)** using an M8 tool.
2. Attach the alternative adapter **(B).**
3. Apply exactly 20 Nm with a torque wrench tool and fix securely. Do not overtighten.

Do not replace the M8 screw.

If damaged, always replace with original spare parts.

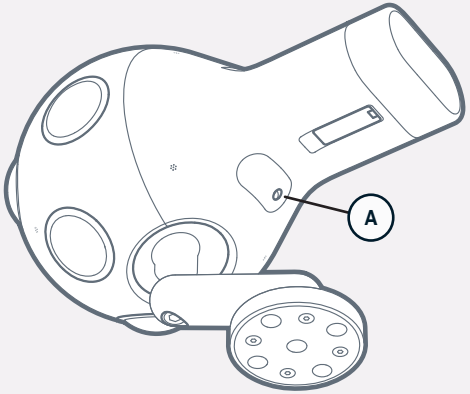


Connector Cap Removal

For streaming data through SDI and supplying external power, remove the connector cap (A) located below the “tail” section by using the provided T6 Torx tool.

For stand alone use, place the connector cap back in the slot and tighten by hand without excessive torque.

This cap provides basic sealing and protection for the SDI and power connectors.



Connecting SDI

Attaching 3G-SDI card

Carefully remove the 3G-SDI SFP+ card **(A)** from the ESD bag, and insert it firmly into the SFP+ socket **(B)**.

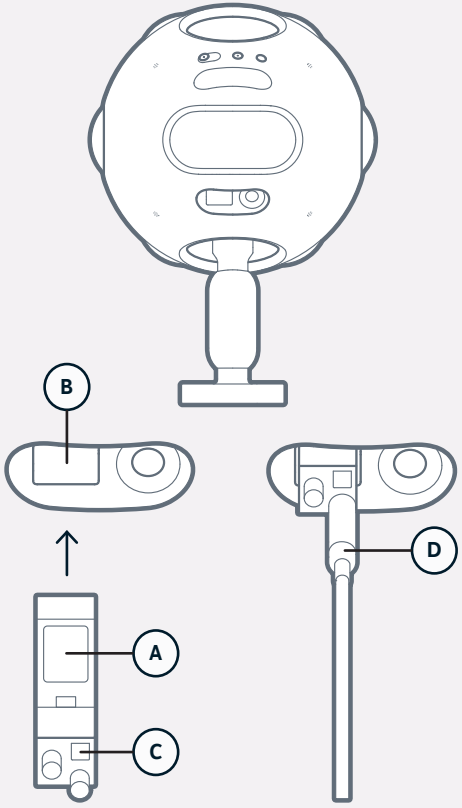
To remove, lift the latch **(C)** on the SDI card and carefully apply backwards pressure to the frame of card, NOT to the DIN sockets.

Attaching SDI DIN cable

Attach a standard SDI DIN connector **(D)** to the lower DIN socket shown by arrow facing away from device.

To remove the cable, lift the cover of the DIN connector, and apply pressure.

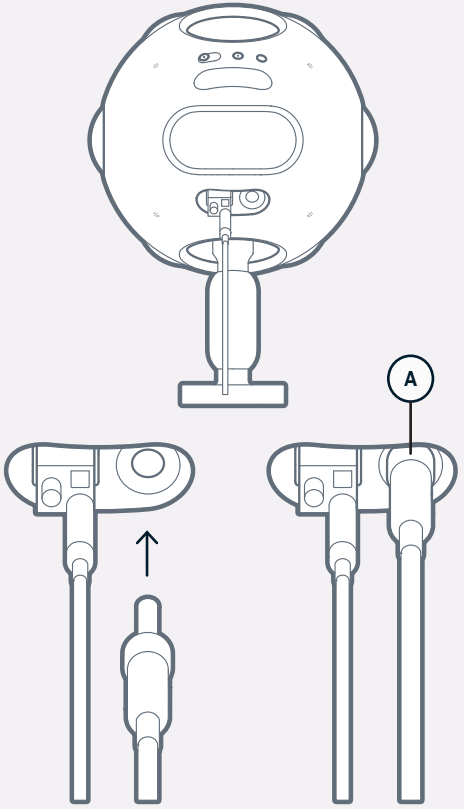
Take care not to apply lateral force to the DIN sockets. Use cable strain relief where necessary, otherwise damage may occur.



Connecting Power

Insert the external power plug into the device firmly, and rotate the lock ring (A) clockwise until it is tight.

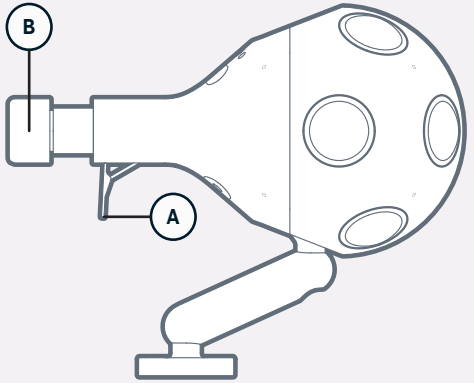
Always ensure the external plug is fully inserted, otherwise the device may not power up, or may use battery power only.



Cartridge Replacement

Before you start make sure the device is stable and mounted correctly.

1. Pull the latch **(A)** to it's full extension to release the cartridge. Do not pull the cartridge while doing so.
2. Pull the cartridge **(B)** out (and close the latch).
3. To insert the cartridge pull the latch to it's full extension.
4. Insert the cartridge with the groove pointing downwards until you notice resistance.
5. Release the cartridge and close the latch.



Charging Battery

Insert a Digital Cartridge (A) into the Docking Station (B).

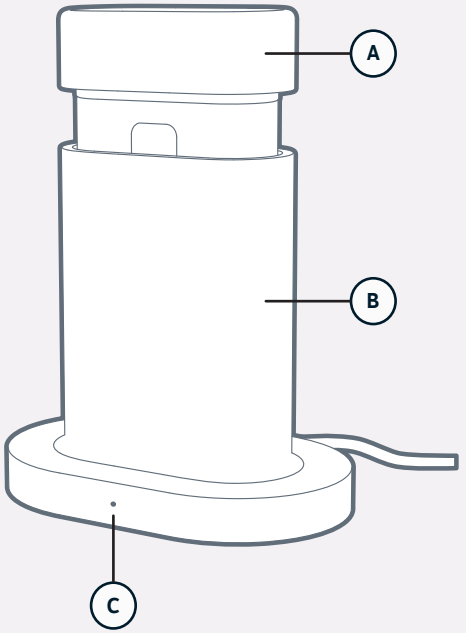
Ensure a power cable is connected to the Docking Station.

The LED on the Docking Station **(C)** should flash white to indicate charging is in progress, and show solid white to indicate when the Digital Cartridge battery is fully charged. Charging an empty battery can take up to 3 hrs.

A Digital Cartridge must be inserted at least once to a powered Docking Station before it can be used in the device.

A red light indicates a problem.

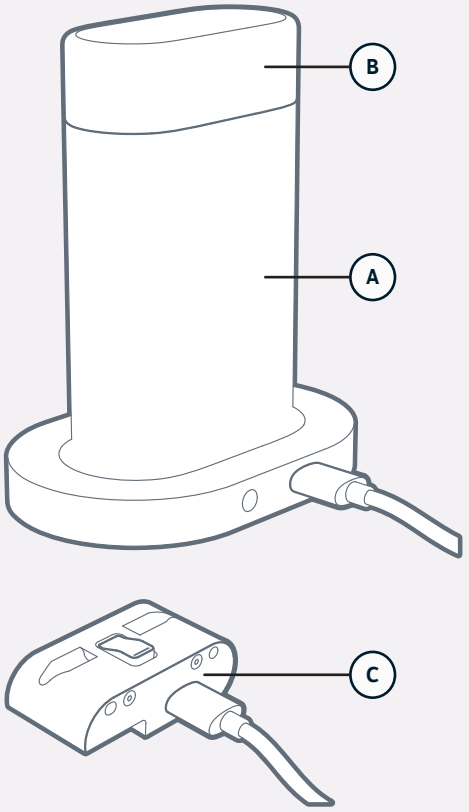
Slow flashing red indicates “No Battery found”. Solid red indicates “Cannot charge” (broken or misplaced battery). Fast flashing red indicates a malfunction.



Extracting Data

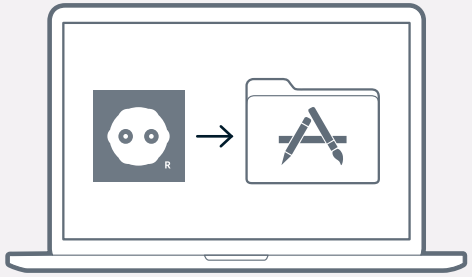
Connect the supplied USB cable from the Docking Station (A) to a computer with the OZO Creator application installed. Insert the Digital Cartridge (B) with a Media Module inside.

Alternatively, connect the supplied USB cable directly between a Media Module **(C)** and the computer.



OZO Applications

To download and install the OZO Applications please follow the instructions on ozo.nokia.com/start.



The OZO Remote Application is needed for example to set and monitor the exposure of the OZO Camera.

The OZO Creator Application is used to process and deploy the captured content to post production tools.

The OZO Preview Application is a tool to quickly access and view rendered content like editorials for audio mixing.

OZO Applications require an Apple Mac Pro® 6-Core Dual GPU using OS X 10.10 Yosemite or newer.

Basic Operation

Power ON-OFF

To power on the device slide the power button **(A)** to the outmost right position and release. The button will stay in an intermediate position and the indicator (LED) in the center of the button indicates booting (by blinking slowly).

Once the booting has finished the indicator discontinues blinking and remains lit. The device always boots into “Broadcasting” mode to allow immediate preview over SDI.

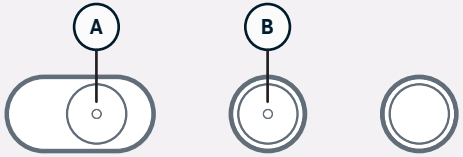
For complete shutdown slide the power button to the outmost left position.

WiFi

By default the device is enabling WiFi immediately after booting is complete. The WiFi-LED **(B)** is blinking slowly to indicate readiness to connect.

The OZO Remote host computer must have WiFi enabled to connect to the OZO Camera. The WiFi-button indicator discontinues blinking and remains lit to indicate a successful connection to the OZO Remote Application.

To boot the device without WiFi (airplane mode) press and hold the WiFi button during startup until booting has finished.



Broadcasting over SDI

You can switch from Standby-mode to Broadcasting either by sliding the power-button **(A)** to the outmost right position and release (as you did for power on) or by using the controls in the camera-mode panel of the OZO Remote Application.

Repeat this procedure to return back to Standby mode.

During Broadcasting a red LED ring around the Capture-button blinks regularly “once in a while” to indicate that the Camera is “On the Air”.

To monitor the live image from the Camera make sure the SDI adapter and cables are connected to your OZO Remote host computer.

Use the Capture Settings panel in OZO Remote to set the exposure.

Capturing

Press the Capture button to start or stop capturing to the internal storage.

While capturing to the internal Media Module the Capture button indicator **(C)** is continuously on. Blinking slowly signals “less than 5 minutes left”. Blinking fast signals “storage is full”.

These limits are also reflected in the “Storage” status group in OZO Remote.

NOTE: To capture on external storage set the Camera to Broadcasting mode instead and use the controls on the external device.

WARRANTY AND LEGAL

WARRANTY, WARRANTY LIMITATIONS AND WARRANTY DISCLAIMER

Subject to the limitations and disclaimers set forth below, Nokia warrants that the products shall be of good quality and free from defects in material and workmanship. Upon the expiration of the time periods set forth below, all liabilities of Nokia will terminate.

Standard Product Warranty

A standard product warranty is granted to the original Buyer by Nokia for a period of one (1) year, parts and labor, for the camera, excluding the batteries. ("Standard Product Warranty") The standard warranty for batteries is ninety (90) days from the date of delivery of the products to Buyer. This Standard Product Warranty covers parts and labor charges for products that have been returned pre-paid shipment to Nokia, a Nokia Reseller or Nokia authorized service center, as directed by Nokia. All warranty returns shall be done in accordance with Nokia's return materials authorization ("RMA") process. Any repaired or replaced product shall be warranted for a period the greater of (i) the balance of the applicable warranty period relating to such Product or (ii) ninety (90) days after it is received by Buyer. Only the components that were repaired or replaced will be eligible for the 90-day period as set forth above. The Standard Product Warranty effective date is the date the product was received by Buyer or Reseller (if purchased for Reseller's own use).

Product Warranty Limitations

All Nokia warranties exclude the following:

1. Maintenance, repair or replacement necessitated by loss or damage resulting from any cause other than normal use and operation of the product in accordance with the Nokia's specifications and product manual, including but not limited to: theft, exposure to weather conditions, use of the product underwater or in wet environments, operator negligence, misuse, abuse, improper electrical/power supply;
2. Alterations, modifications or repairs by Buyer or unauthorized third parties;
3. Accident, disaster, improper handling or storage, droppage, modification to the camera, opening the camera body, use third party accessories or acts of nature or any other peril originating from outside the product;
4. Transportation damage (except for transportation damaged in delivery of the products to Buyer from Nokia), lack of maintenance, defective batteries, battery leakage;
5. Cosmetic damage or other non-operating parts;
6. Using a product in a manner other than intended usage for that product; and
7. Charges related to "No Trouble Found" diagnosis.

Voiding of Product Warranty

Removal or modification of camera mounts voids any and all warranties. Breaking the seal on the camera body is prohibited and voids any and all warranties unless otherwise approved in writing by Nokia. Any parts replaced by Nokia during warranty repair are the property of Nokia and will not be returned to Buyer. Nokia may use refurbished parts for repairs or replacements. Nokia products are compatible with Nokia software, Nokia parts, and Nokia products only. Use of any software, parts, or products other than Nokia or Nokia-approved software, parts, and products voids any and all warranties.

Warranty Disclaimer

EXCEPT AS SPECIFICALLY SET FORTH ABOVE, NOKIA AND ITS LICENSORS MAKE NO WARRANTIES, CONDITIONS, REPRESENTATION OR TERMS, EXPRESS OR IMPLIED, WHETHER BY STATUTE, COMMON LAW, CUSTOM, USAGE OR OTHERWISE AS TO THE PRODUCT OR ANY COMPONENT THEREOF, INCLUDING BUT NOT LIMITED TO NON-INFRINGEMENT OF THIRD PARTY RIGHTS, INTEGRATION, MERCHANTABILITY, SATISFACTORY QUALITY, OR FITNESS FOR ANY PARTICULAR PURPOSE. NOKIA AND ITS LICENSORS DO NOT WARRANT THE PERFORMANCE OR RESULT OF THE PRODUCT.

THE SOLE REMEDY UNDER THIS WARRANTY SHALL BE THE REPAIR, REPLACEMENT, OR CREDIT FOR DEFECTIVE PARTS AS STATED ABOVE. THIS WARRANTY IS THE SOLE WARRANTY GIVEN BY NOKIA AND IS IN LIEU OF ANY OTHER WARRANTIES EITHER EXPRESS OR IMPLIED. THIS WARRANTY EXTENDS TO THE BUYER AND IS NON-TRANSFERABLE TO OTHER THIRD PARTIES. NOKIA WILL NOT BE LIABLE FOR ANY PROPERTY DAMAGE, LOST TIME, OR LOST DATA RESULTING FROM THE FAILURE OF ANY PRODUCT OR EQUIPMENT OR FROM DELAYS IN SERVICE OR THE INABILITY TO RENDER SERVICE.

Third-Party Warranty

Nokia does not honor warranty agreements extended by third parties, and only warranty agreements granted and given by Nokia will be honored by Nokia. Nokia warranties do not cover damage caused by third party products (including approved third party products).

Links

The latest product warranty can be found from **https://ozo.nokia.com/**. For warranty assistance please contact **OZOsupport@nokia.com**.

FCC/IC REGULATORY NOTICES

Modification statement

Nokia Technologies Ltd has not approved any changes or modifications to this device by the user. Any changes or modifications could void the user's authority to operate the equipment.

Nokia Technologies Ltd n'approuve aucune modification apportée à l'appareil par l'utilisateur, quelle qu'en soit la nature. Tout changement ou modification peuvent annuler le droit d'utilisation de l'appareil par l'utilisateur.

Interference statement

This device complies with Part 15 of the FCC Rules and 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'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Wireless notice

This equipment complies with FCC and IC radiation exposure limits set forth for an uncontrolled environment. The antenna should be installed and operated with minimum distance of 20 cm between the radiator and your body. Antenna gain and type must be:

Type	Max Gain
Patch antenna	2.6 dBi

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Cet appareil est conforme aux limites d'exposition aux rayonnements de l'IC pour un environnement non contrôlé. L'antenne doit être installée de façon à garder une distance minimale de 20 centimètres entre la source de rayonnements et votre corps. Gain et Type de l'antenne doit être ci-dessous:

Type	Gain maximum
Antenne patch	2.6 dBi

L'émetteur ne doit pas être colocalisé ni fonctionner conjointement avec à autre antenne ou autre émetteur.

FCC Class B digital device notice

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 communications. 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.

CAN ICES-3 (B) / NMB-3 (B)

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de classe B est conforme à la norme canadienne ICES-003.

Wi-Fi

IMPORTANT: Using Wi-Fi may be restricted in certain countries or in certain circumstances. For example, certain countries are currently considering legislation banning the usage of WiFi during national states of emergency. For more information about WiFi usage restrictions please contact your relevant local authorities.

Recycling

The crossed out wheeled bin symbol on your product, battery and/or accessories means that the item is classified as electrical and electronic equipment. Such items should not be mixed with general household waste, and must be taken to dedicated collection points at the end of their working life for proper treatment, recovery and recycling. This way you help save valuable resources and promote recycling of materials.

NOKIA

OP100-UC-EN-1.0