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ACCOLADE LRF

Thermal Imaging Binoculars

INSTRUCTIONS

ENGLISH / РУССКИЙ

Stream your discoveries

STREAM VISION

Attention! Accolade LRF thermal imaging binoculars require a license if exported outside your country.

Внимание!
Тепловизионные бинокли Accolade LRF требуют лицензии, если они экспортируются за пределы Вашей страны.

Electromagnetic compliance
This product complies with EU Standard **EN 55032:2015**, Class A.
Warning! Operation of this equipment in a residential environment could cause radio interference.

Электромагнитная совместимость.
Данный продукт соответствует требованиям европейского стандарта **EN 55032:2015**, Класс А.
Внимание: эксплуатация данного продукта в жилой зоне может создавать радиопомехи.

Google play

Available on the App Store

RoHS COMPLIANT PRODUCT

v.0518

Class 1 Laser Product

Caution - use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

Внимание – использование других не упомянутых здесь элементов управления и настройки или других методов эксплуатации может подвергнуть Вас опасному для здоровья излучению.

LRF Laser Aperture

ENGLISH

SPECIFICATIONS

MODEL ACCOLADE LRF SKU#	XQ38 77415	XP50 77418
Microbolometer:		
Type	uncooled	uncooled
Resolution, pixels	384x288	640x480
Frame rate, Hz	50	50
Pixel size, μm	17	17
Optical characteristics:		
Magnification, x	3.1	2.5
Continuous digital zoom, x	3.1-12.4	2.5-20
Digital zoom	x2/x4	x2/x4/x8
Objective lens	1:1.2	1:1.2
Close-up range, m	3	3
Exit pupil diameter, mm	5	5
Field of view (HxV), degrees / m@100m	9.8 / 17.2	12.4 / 21.8
Dioptre adjustment, D	±5	±5
Interpupillary distance adjustment, mm	56-71	56-71
Max. observation range of an animal, such as deer, m/y, approx.	1350 / 1475	1800 / 1970
Display:		
Type	AMOLED	AMOLED
Resolution, pixels	640x480	640x480
Operational characteristics:		
Power supply	3.7V	3.7V
Battery type / Capacity / Output voltage	Li-Ion Battery Pack IPS5 / 5000 mAh / DC 3.7V	
External power supply	5V	5V
Operating time on Battery Pack (at t=22°C), h*	7	7
Degree of protection, IP code (IEC60529)	IPX7	IPX7
Operating temperature range	-25 °C ... +50 °C / -13 °F ... 122 °F	
Dimensions, mm / inch	164x130x64 / 6.4x5.1x2.5	164x130x64 / 6.4x5.1x2.5
Weight (without battery), kg / oz	0.6 / 21.2	0.6 / 21.2
Video recorder		
Video / photo resolution, pixel	640x480	640x480
Video / photo format	.avi / .jpg	.avi / .jpg
Built-in memory	8 Gb	8 Gb
Built-in memory capacity	150 min video or >10 000 pictures	
Wi-Fi channel		
Frequency	2.4GHz	2.4GHz
Standard	802,11 b/g/n	802,11 b/g/n
Line-of-sight reception range, m	15	15
Characteristics of the rangefinder		
Safety class for laser equipment according to IEC 60825-1:2014	1	1
Wavelength, nm	905	905
Max. measuring range, m/y**	1000 / 1094	1000 / 1094
Measurement accuracy, m	+/-1	+/-1

* Actual operating time depends on the extent of using Wi-Fi, integrated video recorder and integrated laser rangefinder.
** Depends on the characteristics of the object under observation and environmental conditions.

1 PACKAGE CONTENTS

- Accolade LRF Thermal Imaging Binoculars
- Carrying case
- IPS5 Battery Pack
- Battery charger with mains charger
- Micro USB cable
- Neck strap
- User manual
- Lens cloth
- Warranty card

This product is subject to change in line with improvements to its design.

The latest edition of this user manual is available online at www.pulsar-nv.com

2 DESCRIPTION

Accolade LRF thermal imaging binoculars are based on an IR sensor (uncooled microbolometer) are represented by a number of models featuring various magnification and lens diameter. The binoculars feature comfortable observation with both eyes.

The binoculars are equipped with a precise built-in laser rangefinder designed to measure distance up to 1km.

The binoculars are designed for the use both in the night-time and during the day in adverse weather conditions (fog, smog, rain) to see through obstacles hindering detection of targets (branches, tallgrass, thick bushes etc.). The binoculars do not require an external source of light and are not affected by bright light exposure.

Accolade LRF thermal imaging binoculars are designed for various areas of application including night hunting, observation, trail orienteering, rescue operations etc.

3 FEATURES

Major features:

- Built-in precise laser rangefinder (up to 1000m)
- Comfortable for long observation
- Variable interpupillary distance
- High refresh rate 50 Hz
- Built-in video recorder
- Built-in Wi-Fi module
- Wi-Fi video transmission
- Live internet video sharing
- Frost resistant AMOLED display
- Quick-change long-life rechargeable Battery Packs
- Fully waterproof IPX7

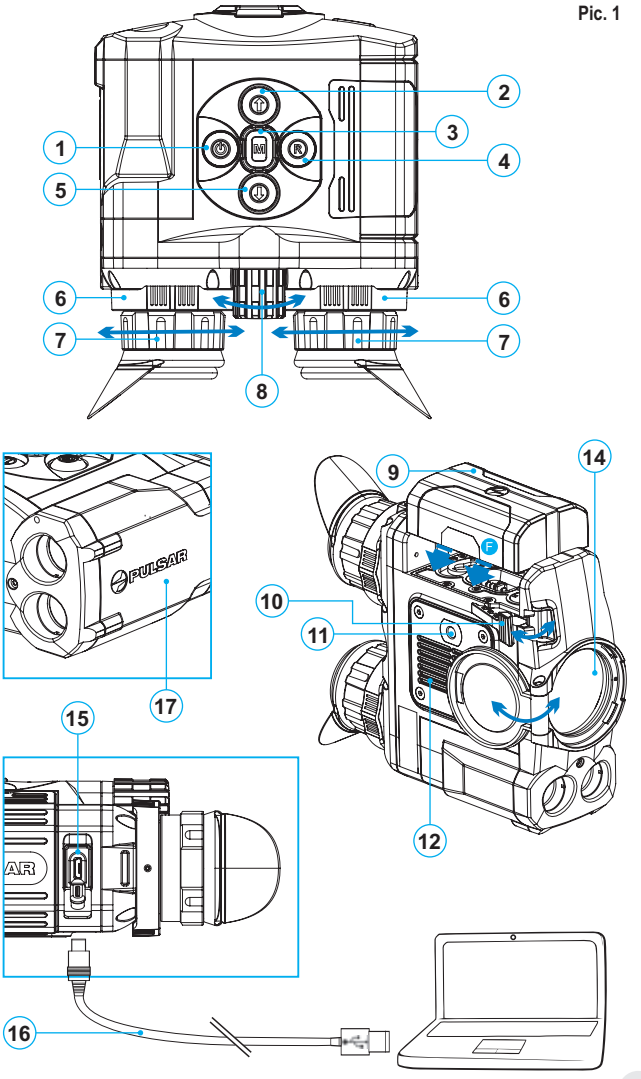
Extra features:

- “Picture-in-Picture” mode
- Color palettes
- Observation modes
- Calibration modes
- Manual contrast and brightness adjustment

4 EXTERNAL VIEW AND CONTROLS

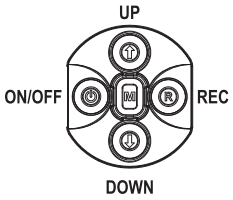
① Power **ON/OFF** / Calibration button
② Navigation button **UP**
③ Button **MENU**
④ Recording button **REC**
⑤ Navigation button **DOWN**
⑥ Interpupillary distance adjustment rings
⑦ Dioptre adjustment rings
⑧ Lens focusing ring
⑨ Battery Pack
⑩ Battery Pack latch
⑪ Tripod mount
⑫ Radiator cooling system
⑬ Lens cover
⑭ Objective lens
⑮ MicroUSB port
⑯ MicroUSB cable
⑰ Integrated laser rangefinder

Pic. 1



5 FUNCTIONS OF CONTROL BUTTONS

BUTTON	CURRENT OPERATING MODE	FIRST SHORT PRESS	OTHER SHORT PRESSES	LONG PRESS
ON/OFF (1)	**Device is off**	Power device on	Calibrate the sensor	Turn display off/ Power device off
	Display OFF mode	Turn display on	Calibrate the sensor	
	Device is on	Calibrate the sensor		
UP (2)	**Regular**	Activate rangefinder		Switch between colour palettes
	Rangefinder	Measure distance		Start/stop SCAN mode
	Menu navigation	Navigation upwards/rightwards		----
MENU (3)	**Regular**	Enter quick menu	Switch between quick menu options	Enter main menu
	Menu navigation	Confirm selection		----
DOWN (5)	**Regular**	Control incremental digital zoom		PiP on/off
	Menu navigation	Navigation downwards/leftwards		----
REC (4)	**Video**	Start video recording	Pause / resume video recording	Stop video recording / Switch to photo mode
	Photo	Take a photograph		Switch to video mode

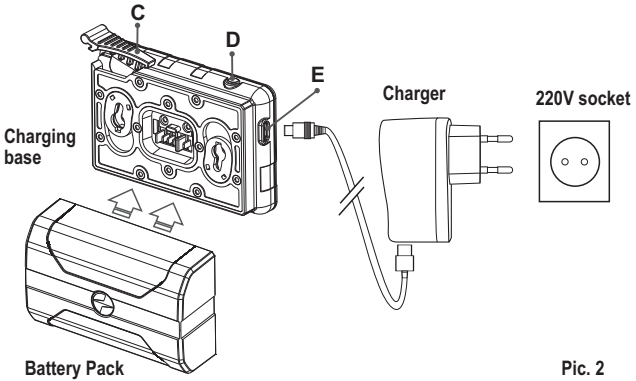


6 USING THE BATTERY PACK

Accolade LRF thermal imaging binoculars are supplied with a rechargeable Li-Ion Battery Pack IPS5 which allows operation for up to 7 hours. Please remember to charge the Battery Pack before first use.

Charging:

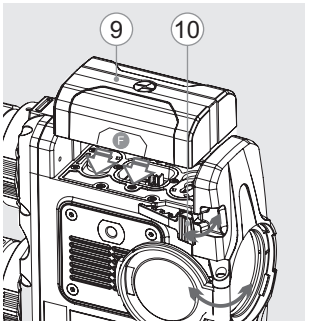
- Lift the lever **(C)** of the charging base.
- Remove the protective cover from the Battery Pack.
- Install the Battery Pack into the charging base as shown in Pic.2; click the lever **(C).**
- Upon installation, a green **LED** indicator **(D)** on the charging base will start to glow and begin flashing:
  - **once** if the battery charge ranges from **0% to 50%**;
  - **twice** if the battery charge ranges from **51% to 75%**;
  - **three times** if the battery charge ranges **from 76% to 100%**;
- If the indicator lights green continuously, the battery is fully charged.
- You can remove the battery from the charger by lifting the lever **(10)**.
- If the indicator of the charger lights **red** continuously upon battery installation, probably the battery's charge level is lower than acceptable (the battery has been long in deep discharge).
  Keep the battery in the charger for a long time (up to several hours), remove and re-insert it. If the indicator starts blinking **green**, the battery is good; if it keeps lighting **red** it's defective.
  Do not use the battery!
- Connect the Micro-USB plug of the USB cable to the port **(E)** of the charger.
- Connect the Micro-USB plug to the charger.
- Insert the plug of the charger to the 220V socket.



Pic. 2

Installing the Battery Pack:

- Lift the lever **(10)**.
- Install the battery **(9)** all the way into the dedicated slot on the device housing so that element **F** appears from below **(Pic.3)** .
- Fix the battery by clicking the lever.



Pic. 3

Safety measures:

- Only use the charger supplied with your binoculars.
- **When keeping the battery for a long period, the battery should not be fully charged or fully discharged.**
- **Do not charge the battery immediately after bringing the battery from cold environment to a warm one. Wait for 30-40 minutes for the battery to get warm.**
- Charge the Battery Pack at a temperature from 0 °C to +45 °C. Otherwise batter's life will decrease significantly.
- Do not leave a battery unattended while charging.
- Never use a modified or damaged charger.
- Do not leave the Battery Pack with a charger connected to the mains longer than 24 hours after full charge.
- Do not expose the battery pack to high temperature or to a naked flame.
- **Do not submerge the battery in water.**
- Do not connect external device with a current consumption that exceeds permitted levels.
- The Battery Pack is short circuit protected. However, any situation that may cause short-circuiting should be avoided.
- Do not dismantle or deform the Battery Pack.
- Do not drop or hit the battery.
- When using the battery at negative temperatures, battery's capacity decreases, this is normal and is not a defect.
- Do not use the battery at the temperatures above those shown in the table – this may decrease battery's life.
- Keep the battery out of the reach of children.

7 EXTERNAL POWER SUPPLY

- The device can be powered with an external power supply such as Power Bank (5V).
- Connect the external power supply to the USB port **(15)** of the device **(Pic. 1)**.
- The device switches to operation from external power supply, and the IPS5 Battery Pack will begin slowly charging.
- The display will show the battery icon with charge level as a percentage.
- If the device operates on external power supply but the IPS5 battery is not connected, icon is shown.
- When the external power supply is disconnected, the device switches to the internal battery pack without powering off.

8 OPERATION

WARNING!
Do not point the objective lens of the device at intensive sources of light such device emitting laser radiation or the sun. This may render the electronic components inoperative. The warranty does not cover damage caused by improper operation.

WARNING!
The radiator cooling system (12) becomes warm during operation: this is normal and allows an increase in the sensitivity of the device.

Powering on and image setup

- Open the lens cover **(13)**.
- Turn the device on with a short press of the **ON/OFF (1)** button.
- Adjust the interpupillary distance with the rings **(6)** by moving the eyepieces farther or closer to each other.
- To obtain a crisp image of the icons on the display, rotate the dioptre adjustment rings **(7)**. Once adjusted, there is no need to rotate the dioptre adjustment ring for distance or any other conditions.
- To focus on the object being observed rotate the lens focusing ring **(8)**.
- To set up display brightness and contrast and continuous zoom, please refer to the **QUICK MENU FUNCTIONS** section.
- After use, press and hold down the **ON/OFF** button to turn the device off.

9 SENSOR CALIBRATION

Calibration allows levelling of the background temperature of the microbolometer and eliminates image flaws (such as frozen image, vertical stripes etc.).

There are three calibration modes:
manual **(M)**, semi-automatic **(SA)** and automatic **(A)**.

Select the desired mode in the menu option **"CALIBRATION"**

- **Mode M (manual)**
  - Close the lens cover, press briefly the **ON/OFF (1)** button.
  - Open the lens cover.
  Mode SA (semi-automatic)
- - Press briefly the **ON/OFF** button to calibrate.
  - You do not need to close the lens cover (the sensor is closed with the internal shutter automatically).
  Mode A (automatic)
- - The device calibrates by itself according to the software algorithm. You do not need to close the lens cover (the sensor is closed with the internal shutter automatically).
  - In the automatic mode the user can calibrate the sensor with the **ON/OFF** (in the SA mode) button.

10 INCREMENTAL DIGITAL ZOOM

The device allows you to quickly increase the basic magnification (please refer to the **"Digital zoom"** line in the specifications table) by 2 or 4 times (XQ models) or 2 or 4 or 8 times (XP models).
To operate the discrete digital zoom, press successively the **DOWN (5)** button.
The digital zoom will not be saved after the device is re-started.

11 QUICK MENU FUNCTIONS

The Quick menu allows change of basic settings such as display brightness and contrast, smooth digital zoom.

- Enter the menu with a short press of the **M (3)** button.
- To toggle between the functions below, press successively the **M** button.
- **Brightness** – press briefly the **UP(2)/DOWN(5)** buttons to change display brightness from 00 to 20.
- **Contrast** – press briefly the **UP/ DOWN** buttons to change display contrast from 00 to 20.

- **Smooth digital zoom** ⊕ - press the **UP/ DOWN** buttons to change digital zoom from 1.0x to 4.0x (or 8.0x in XP model).
  Smooth digital zoom is in 0.1x increments.

Notes.

- actual magnification is the product of the basic magnification value and continuous digital zoom value.
*For example: the device's basic magnification is 3.1x, smooth digital zoom value x1.7. Actual magnification is 5.2x (3.1*1.7).*

- display brightness and contrast settings are saved in the memory when the unit is turned off.

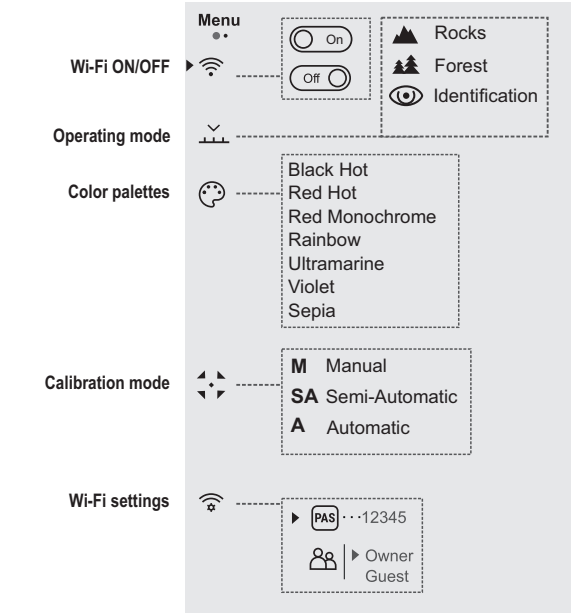
- To exit quick menu, press and hold down the **M** button or wait 5 sec for automatic exit.

12 MAIN MENU FUNCTIONS

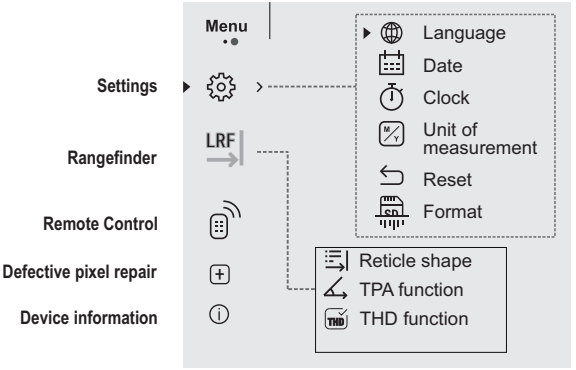
- Enter the main menu with a long press of the **M (3)** button.
- Press the **UP(2) / DOWN(5)** buttons to switch between the menu options.
- Menu navigation is cyclical: as soon as the last menu option of the first tab is reached, first menu option of the second tab starts.
- Enter a menu option with a brief press of the **M** button.
- Exit the menu with a long press of the **M** button.
- Automatic exit takes place in 10 sec of inactivity (buttons are not pressed).
- Upon exit from the menu the cursor location ▸ is memorized only for the duration of the working session (i.e. until the unit is turned off).
- Upon restarting the device and entering the menu the cursor will be located on the first menu option.

MENU CONTENTS:

Tab 1



Tab 2



Menu contents and description

Wi-Fi — **Wi-Fi ON/OFF**

- Press and hold down the **M (3)** button to enter the main menu.
- Select the desired menu option with the **UP (2) / DOWN (5)** buttons.
- Turn Wi-Fi on/off with a short press of the **M** button.

Operating mode

Selecting operating mode

There are three automatic operating modes:

Each mode includes optimal combination of parameters (brightness, contrast, gain etc.) to deliver best possible image in specific viewing conditions.

- Press and hold down the **M (3)** button to enter the main menu.
- Select the desired menu option with the **UP/DOWN** buttons.
- Confirm your selection with a brief press of the **M** button.

Rocks

Enhanced contrast mode.

Perfect for viewing animals against the background of rocks, ground in mountain areas.

Forest

Low contrast mode

Perfect for viewing animals against a background of vegetation.

Identification

Universal mode for various modes of observation.

Color palettes

Selecting colour palette

- Basic image mode is **"White Hot"**
- To select another palette:
- Press and hold down the **M (3)** button to enter the main menu.
- Select the desired palette with the **UP (2)/DOWN (5)** buttons.
- Confirm your selection with a brief press of the **M** button.

Black Hot palette (white colour corresponds to low temperature, black colour – to high temperature)
Red Hot
Red Monochrome
Rainbow
Ultramarine
Violet
Sepia

Switch between the palette selected in the menu and the basic palette by holding down the **UP (2)** button.

Calibration

Selecting calibration mode

There are three calibration modes: manual **(M)**, semi-automatic **(SA)** and automatic **(A)**.

- Press and hold down the **M (3)** button to enter the main menu.
- Select the desired calibration mode with the **UP (2)/DOWN (5)** buttons.
- Confirm your selection with a brief press of the **M** button.

More details in the section **"Sensor calibration".**

Wi-Fi settings

Wi-Fi setup

This menu option allows you to set up your device for operation in a Wi-Fi network.

Password setup

This menu option allows you to set a password to access your thermal imager from an external device.

The password is used to connect an external device (i.e. smartphone) to your thermal imager.

- Press and hold down the **M (3)** button to enter the main menu.
- Select the menu option with the **UP (2)/DOWN (5)** buttons.
- Press briefly the **M** button to enter submenu **"PAS".**
- The default password **"12345"** appears on the display.

- Set the desired password with the **UP / DOWN** buttons (button **UP** to increase value; button **DOWN** to reduce).
- Switch between digits with a short press of the **M** button.
- Save the password and exit the submenu with a long press of the **M** button.

Access level setup

PAS ▸ Owner
Guest

Access level setup

This menu option allows you to set required access level of the Stream Vision application to your device.

- Access level **Owner**.

The Stream Vision user has the complete access to all device's functions.

- Access level **Guest**.

The Stream Vision user has the access only to the real time video stream from the device.

Settings

The following settings are available:

Language

▸ ··· English

Selecting interface language

- Press and hold down the **M (3)** button to enter the main menu.
- Select option “Settings” with the **UP (2)/DOWN (5)** buttons. Press briefly **M** to confirm.
- Select option "Language" with **UP/DOWN.**
- Press briefly **M** to confirm.
- Select one of the available interface languages with a short press of the **UP/ DOWN** buttons: English, French, German, Spanish, Russian.
- Switch between languages with a brief press of the **M** button.
- Save selection and exit the submenu with a long press of the **M** button.

Date

Date setup

- Press and hold down the **M (3)** button to enter the main menu.
- Select option **“Settings”** with the **UP (2)/DOWN (5)** buttons. Press briefly **M** to confirm.
- Select option **"Date"** with **UP/DOWN**.
- Press briefly **M** to confirm.

- Date format is displayed as: **YYYY/MM/DD** (year/month/day)
- Select the correct values for the year, month and date with a short press of the **UP/ DOWN** buttons.
- Switch between digits with a short press of the **M** button.
- Save selected date and exit the submenu with a long press of the **M** button.

Time

Time setup

- Press and hold down the **M (3)** button to enter the main menu.
- Select option **“Settings”** with the **UP (2)/DOWN (5)** buttons. Press briefly **M** to confirm.
- Select option **"Time"** with **UP/DOWN**.
- Press briefly **M** to confirm.
- Select the desired time format with a short press of the **UP/ DOWN** buttons: 24 or PM/AM.
- Switch to hour setup with a brief press of the **M** button.
- Select hour value with a brief press of the **UP/ DOWN** buttons.
- Switch to minute setup with a brief press of the **M** button.
- Select minute value with a brief press of the **UP/ DOWN** buttons.
- Save selected date and exit the submenu with a long press of the **M** button.

▸ ··· **Units of measure**

Selection of units of measurement

- Press and hold down the **M (3)** button to enter the main menu.
- Select option **“Settings”** with the **UP (2)/DOWN (5)** buttons. Press briefly **M** to confirm.
- Select option **"Units of measure"** with **UP/DOWN**.
- Press briefly **M** to confirm.
- Select the desired unit of measurement - metres or yards - with **UP/DOWN**. Press briefly **M** to confirm.
- Exit to settings submenu takes place automatically.

Reset **Restore default settings**

- Press and hold down the **M (3)** button to enter the main menu.
- Select option **"Settings"** with the **UP (2)/DOWN (5)** buttons. Press briefly **M** to confirm.
- Select option **"Reset"** with **UP/DOWN**. Press briefly **M** to confirm.
- With a short press of the **UP/ DOWN** buttons select **"Yes"** to restore default settings or **"No"** to abort.
- Confirm selection with a brief press of the **M** button.
- If **"Yes"** is selected, display will show **"Return default settings?"** and **"Yes"** and **"No"** options. Select **"Yes"** to restore default settings.
- If **"No"** is selected, action is aborted and you return to the submenu.

The following settings will be restored to their original values before changes made by the user:

- **Operating mode of video recorder** – video
- **Unit's operating mode** – Forest
- **Calibration mode** – automatic
- **Language** – English
- **Wi-Fi** – off (default password)
- **Magnification** – off (no digital zoom)
- **PiP** – off
- **Colour palette** – White Hot
- **Unit of measurement** - metric

Warning: date and time settings, default pixel map and remote control activation are not restored.

Format **Formatting**

This menu option allows you to format your device's Flash card or memory card (erase all files from its memory).

- Press and hold down the **M (3)** button to enter the main menu.
- Select option "Settings" with the **UP (2)/DOWN (5)** buttons. Press briefly **M** to confirm.
- Enter the Format submenu with a short press of the **M** button.
- Press briefly **M** to confirm.
- With a short press of the **UP/ DOWN** buttons select **"Yes"** to format the memory card or **"No"** to return to the submenu.
- Confirm selection with a short press of the **M** button.

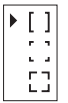
- If **"Yes"** is selected, display will show **"Do you want to format memory card?"** and **"Yes"** and **"No"** options. Select **"Yes"** to format the memory card.
- Message **«Memory card formatting»** means that formatting is in progress.
- Upon completion of formatting the message **«Formatting completed»** is shown.
- If **"No"** is selected, formatting is aborted and you return to the submenu.

Rangefinder

Menu item **"Rangefinder"** allows you to set up built-in rangefinder's parameters as follows:

- Enter the main menu with a long press of the **M (3)** button.
- Enter the submenu "Rangefinder" with a short press of the **M** button.
- Set the desired parameter with the **UP (2)** and **DOWN (5)** buttons.

Selection of reticle shape



- Select one of the three reticle shapes with the **UP (2)** and **DOWN (5)** buttons.
- Confirm selection with a brief press of the **M (3)** button.
- Selected reticle will appear on the display.
- The reticle will disappear from the display if the rangefinder is not used longer than 4 seconds.

Function "Target position angle" (TPA)

- Function **"TPA"** allows you to change the angle of target location (angle of elevation). When the function is activated, the angle is shown continuously. When the function is disabled, the angle is shown if the rangefinder is working. The angle is shown in a pop-up menu during measurement.
- Select On to activate **"TPA"**.
- Confirm selection with a brief press of the **M (3)** button.

"THD" function

- **"THD"** function allows you to measure true horizontla distance to a target based on the angle of elevation value.
- Select On to activate **"THD"**.
- Confirm selection with a brief press of the **M (3)** button. Hereinafter message THD will appear above the distance readings.

Remote Control

Remote control activation (bought separately)

Before operating the remote control (RC), remember to activate it as follows:

- Press and hold down the **M (3)** button to enter the main menu.
- Select option “Remote Control” with the **UP (2)/DOWN (5)** buttons. Press briefly **M** to confirm.
- Press briefly **M** to confirm.
- Display shows message “Wait” and countdown starts (30 sec), within which hold down for two seconds any RC button.
- If activation is successful, the message **«Connection complete»** appears .
- If error occurs the message **«Connection failed»** appears . Repeat the procedure.
- The RC is activated and ready for use.
- To unlink the RC, press the **M** button, wait for the countdown to expire without pressing any RC button for 30 sec.
- All remote controls previously linked to your device are now unlinked.
- Now you can activate your RC again or activate another RC.

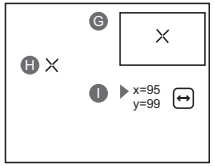
Defective pixel repair

Defective pixel repair

When operating a thermal imager, defective (dead) pixels (bright or dark dots with constant brightness) may become visible on the sensor.

Defective pixels on the sensor **may** proportionally **increase** in size when **digital zoom** is activated.

Accolade LRF thermal binoculars allow the user to repair defective pixels on the detector using a software-based method or to abort deletion.



- Press and hold down the **M (3)** button to enter the main menu.
- Select option **“Defective pixel repair”** with the **UP (2)/DOWN (5)** buttons. Press briefly **M** to confirm.
- Press briefly **M** to confirm.
- A marker **(H)** appears on the left side of the display.
- On the right side of the display appears “magnifying glass” **(G)** – a magnified image in a frame with a fixed cross , designed for easier detection of a defective pixel and to match the pixel with the marker, horizontal and vertical arrows for X and Y axes **(I)** showing marker's movement.
- With a short press of the **UP/ DOWN** buttons move the marker to align it with a defective pixel.
- Switch the direction of the marker from horizontal to vertical and vice versa with a short press of the **M** button.
- Align the defective pixel with the fixed cross in the frame – the pixel should disappear.
- Delete the defective pixel with a brief press of the **REC (4)** button.
- A brief message **“OK”** appears in the frame in case of success.
- Then you can delete another defective pixel by moving the marker along the display.
- Exit **“Defective pixel repair”** with a long press of the **M** button.

Attention! The display of a thermal imager may have 1-2 pixels represented as bright white or color (blue, red) dots which cannot be deleted and are not a defect.

Return to default defective pixel pattern

This option allows you to cancel deletion of the defective pixels and return them to the original state.

- Enter the submenu with a brief press of the **M** button.
- Select icon and press **M**.
- Select **“Yes”** if you wish to return to default defective pixel pattern, or **“No”** if you do not.
- Confirm selection with a short press of the **M** button.

Device information

This option allows the user to view the following information about the device:

- Full name
- SKU number
- serial number
- software version
- hardware version
- service information

Select menu option **Device information** with a brief press of the **M** button to review information.

13 STATUS BAR

The status bar is located in the lower part of the display and shows information on the actual operating status of the device, including:

(1) Colour palette
*(shown only if the **"Black Hot"** palette is selected)*
(2) Operating mode
(3) Calibration mode
(in the automatic calibration mode, three seconds before automatic calibration a countdown timer 00:01 is shown in place of the calibration mode icon*)*.
(4) Current full magnification (for example, 16x)
(5) Wi-Fi connection status
(6) Running time
(7) Battery charge level
(if the device is powered by the Battery Pack) or
External battery power indicator
(if the device is powered by an external power supply)

14 BUILT-IN LASER RANGEFINDER

The binoculars are equipped with a built-in rangefinder **(9)**, allowing you to measure distance to objects up to 1000m away.
How the rangefinder works:

• Turn on the device, set up image according to section "Operation", press the **UP (2)** or **LRF (21)** button on remote control - rangefinding reticle appears; in the top right corner of the display dashes of distance values with unit of measurement appear, i.e. the rangefinder enters the stand-by mode. ----m
• If PiP mode is activated, the aiming reticle disappers upon activation of the rangefinder and the PiP window remains active.
• Point the rangefinding reticle at an object and press the **"UP"** button.
• In the top right corner of the display you will see distance in metres (or yards - depending on settings). 7 m
***Note:** if the rangefinder is idle longer than for three seconds, it turns off automatically.*

Operation in SCAN mode:

• To measure distance in scanning mode, hold down the **UP (2)** or **LRF (21)** button on remote control for longer then two seconds. Measurement readings will be changing in real time as you point the binoculars at different objects. Message **SCAN** appears in the top right corner.
• To exit **SCAN** mode, press **UP** or **LRF** (RC) button again.
• If measurement fails, dashes will appear on the display.
• In 3-4 seconds of inactivity (no measurement is taken) the rangefinder turns off, the rangefinding reticle with readings disappears from the display.
Notes:
• To select a rangefinding reticle, please go to the respective menu option.
• To select a unit of measurement (metres or yards) go to **"Settings".**

Peculiarities of operation

• Accuracy of measurement and maximum range depend on the reflection ratio of the target surface, the angle at which the emitting beam falls on the target surface and environmental conditions. Reflectivity is also affected by surface texture, colour, size and shape of the target. A shiny or brightly coloured surface is normally more reflective than a dark surface.
• Measuring range to a small sized target is more difficult than to a large sized target.
• Accuracy of measurement can also be affected by light conditions, fog, haze, rain, snow etc. Ranging performance can degrade in bright conditions orwhen ranging towards the sun.

15 VIDEO RECORDING AND PHOTOGRAPHY

Accolade LRF thermal imaging binoculars feature video recording and photography of the image being ranged to the internal memory card.
Before using this feature, please read the menu options **"Date setup"**, **"Time setup"** of the section **"Main menu functions"**.

The built-in recorder operates in two modes - **VIDEO** and **PHOTO.**

VIDEO mode. Video recording

- The device in the VIDEO mode upon turning on.
- In the top left corner you will see icon and remaining recording time in the format HH:MM (hours: minutes) 5:12.
- Start video recording with a short press of the **REC (4)** button.
- Upon start of video recording icon disappears, and icon **REC** and recording timer in the format MM:SS (minutes : seconds) appear instead: ● REC | 00:25

- Pause and resume recording video with a short press of the **REC** button.
- Stop recording video with a long press of the **REC** button.
- Video files are saved to the memory card after stopping video.
- Switch between modes (Video-> Photo-> Video) with a long press of the **REC** button.

Photo mode. Photography

- Switch to the **Photo** mode with a long press of the **REC (4)** button.
- Take a picture with a brief press of the **REC** button. The image freezes for 0.5 sec and a photo is saved to the internal memory.
- in the top left corner of the display you can see: photography icon, **">100"** means that you can take more than 100 pictures. If the number of available pictures is less than 100, actual amount of available pictures (for example 98) is shown next to the icon .

Notes:

- you can enter and operate the menu during video recording;
- recorded videos and photos are saved to the built-in memory card in the format img_xxx.jpg (photos); video_xxx.avi (videos). xxx – three-digit counter for videos and photos;
- counter for multimedia files cannot be reset;

Attention!

- Maximum duration of a recorded file is seven minutes. After this time expires a video is recorded into a new file. The number of recorded files is limited by the capacity of unit's internal memory.

- check regularly the free capacity of the internal memory, move recorded footage to other storage media to free up space on the internal memory card.

IMPORTANT!

To playback video files recorded by thermal imaging devices on iOS-based computers, we recommend that you use **VLC** video player or **Elmedia player.**

Download links and QR codes are shown below:

VLC VIDEO PLAYER
http://www.videolan.org/vlc/download-macosx.html

ELMEDIA VIDEO PLAYER
https://itunes.apple.com/us/app/elmedia-multiformat-video/id937759555?mt=12

16 WI-FI FUNCTION

Your thermal imager features wireless connection option (Wi-Fi) which links it with external appliances (smartphone, tablet PC).

- Turn on the wireless module in the respective menu option. Wi-Fi operation is shown in the status bar as follows:

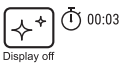
Connection status	Status bar indication
Wi-Fi is off	
Wi-Fi activated by the user, Wi-Fi in the device is being activated	
Wi-Fi is on, no connection with device	
Wi-Fi is on, device connected	

- Your device is detected by an external device as **"Accolade LRF_XXXX**", where **XXXX** – is the last four digits of device's serial number».
- After a password is generated on an external appliance (please refer to the menu option **"Wi-Fi setup"** of the section "**Main menu functions"** of this user manual) and connection is established, the icon in the status bar changes to .

17 FUNCTION DISPLAY OFF

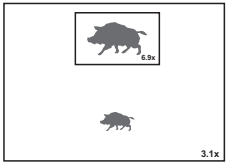
The DISPLAY OFF function deactivates transmission of image to the display by minimizing its brightness. This prevents accidental disclosure. The device keeps running.

- When the device is on, hold down the **ON/OFF (1)** button. Display goes out, message **"Display off"**.
- To activate the display, press briefly the **ON/OFF** button.
- When holding down the **ON/OFF** button, the display shows **"Display off"** message with countdown, the device will turn off.



18 FUNCTION PiP

PiP (“Picture in Picture”) allows you to see a zoomed image simultaneously with the main image in a dedicated window.



- Turn on/off the **PiP** function with a long press of the **DOWN (5)** button.
- Change zoom ratio in the **PiP** window with a short press of the **DOWN** button.
- The zoomed image is displayed in a dedicated window, with the full optical magnification being shown.
- The main image is shown with optical magnification ratio which corresponds to ratio x1.0.
- When **PiP** is turned on, you can operate the discrete and continuous digital zoom. The full optical magnification will take place only in the dedicated window.
- When **PiP** is turned off, the image is shown with the optical magnification set for the **PiP** function.

19 STREAM VISION

Accolade LRF thermal imaging binoculars support Stream Vision technology which allows you to stream an image from the display of your thermal imager to a smartphone or tablet PC via Wi-Fi in real time mode. You can find further guidelines on Stream Vision on our web site www.pulsar-nv.com

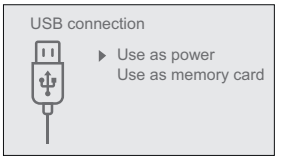
Note: the Stream Vision application allows you to update the firmware features of your thermal imager.
Scan the QR codes to download Stream Vision free of charge:

Google Play (Android OS):

iTunes (iOS):

20 USB CONNECTION

- Connect one end of the USB cable **(16)** to the Micro-USB **(15)** port of your device, and the other end to the USB port of your PC/laptop.
- Turn the device on with a short press of the **ON/OFF (1)** button (device that has been turned off cannot be detected by your computer).
- Your device will be detected by the computer automatically; no drivers need to be installed.
  Two connection modes will appear on the display:
- **Memory card (external memory)** and **Power**.
- Select connection mode with **UP** and **DOWN** buttons.



- Confirm selection with a short press of the **M** button.

Connection modes:

Memory card (external memory).

- In this mode the device is detected by the computer as a flash card. This mode is designed for work with the files saved in device's memory. The device's functions are not available in this mode; the device turns off automatically.
- If video recording was in progress when connection was made, recording stops and video is saved.
- When **USB** is disconnected from the device where connection is in the **USB** Mass storage device mode, the device remains on the **OFF** state. Turn the device on for further operation.

Power.

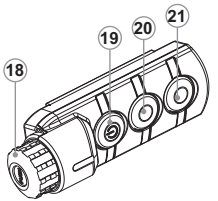
- In this mode PC/laptop is used as an external power supply. The status bar shows icon . The device continues operating and all functions are available.
  Note: The Battery pack installed in the device is not being charged!
- When **USB** is disconnected from the device when in the Power mode, the device keeps operating with Battery Pack, if available, and it has sufficient charge.

21 WIRELESS REMOTE CONTROL

(bought separately)

Wireless remote control (RC) duplicates the power on function, digital zoom, rangefinder control, and menu navigation.

	Controller (18)	Button ON (19)	Button ZOOM (20)	Button LRF (21)
Brief press	Enter quick menu	Turn on device / Calibrate sensor	Activate incremetal zoom	Activate rangefinder / Measure distance
Long press	Enter main menu	Display Off / Turn off device	Activate function PiP	Activate **SCAN** mode
Clockwise rotation	Increase parameter, move upwards			
Counter-clockwise rotation	Decrease parameter, move downwards			



22 MAINTENANCE AND STORAGE

Maintenance should be carried out no less frequently than twice a year, and should consist of the following measures:

- Wipe external plastic and metal surfaces clean of dust and dirt with a soft cloth moistened with a synthetic cleaning agent.
- Clean the electric terminals of the Battery Pack and device's battery slot using a grease-free organic solvent.
- Check the objective and eyepieces lenses; rangefinder's emitter and receiver lenses. If required, remove dust and sand (preferably by a noncontact method). Clean the external surfaces of the lenses with products expressly designed for this purpose.
- Store the device in a carrying case. Remove the Battery Pack for long-term storage.

23 TECHNICAL INSPECTION

Check:

- External view (there should be no cracks on the housing).
- The state of the objective and eyepiece lenses (there should be no cracks, spot, dust, deposits etc.).
- The state of the Battery Pack (should be charged) and electric terminals (there should be no oxidation).
- Correct functioning of the controls.

24 TROUBLESHOOTING

The table presented below lists some potential problems that may occur when using the device. If a problem encountered with the device is not listed, or if the recommended action does not resolve the problem, the unit should be returned for repair.

Problem	Check	Corrective action
The thermal imager will not turn on.	Battery Pack is discharged.	Charge the battery.
The device does not operate on external power supply.	USB cable is damaged.	Replace USB cable.
	External power supply is discharged.	Charge the external power supply (if necessary).
The device does not operate on external power supply. Battery Pack is not installed on the device.	Stable operation of the device with certain external power supplies (like power bank) is not guaranteed unless the standard IPS5/IPS10 Battery Pack is installed.	Before using an external power supply, install the Battery Pack (it may be empty) on the device. You can remove the Battery Pack once the device turns on.
The image is blurry, with vertical stripes and uneven background.	Calibration is required.	Carry out calibration according to Section "SENSOR CALIBRATION".
The image is too dark.	Brightness or contrast level is too low.	Adjust brightness/contrast with the UP/DOWN buttons.
Poor image quality / Detection range reduced.	Problems described may arise in adverse weather conditions (snow, rain, fog etc.).	
Smartphone or tablet PC cannot be connected to the device.	Password in the unit was changed.	Delete network and connect again inserting the password saved in the device.
	There are too many Wi-Fi networks in the area where the device is located which may cause signal interference.	To ensure stable Wi-Fi performance, move the device to an area with few or no Wi-Fi networks.

Problem	Check	Corrective action
No Wi-Fi signal or erratic signal.	The device is beyond reliable Wi-Fi range. There are obstacles between the device and the signal receiver (i.e. concrete walls).	Place the device in line-of-sight of the Wi-Fi signal.
The device cannot be powered on with wireless remote control.	Remote control is not activated. Low battery.	Activate the remote control according to instructions. Install a new CR2032 battery.
When using the scope at below zero temperatures the image quality is worse than at positive temperatures.	Because of variations in thermal conductivity, objects (surrounding environment, background) under observation become warm more quickly at above-zero temperatures, which allows higher temperature contrast and, thus, the quality of the image produced by a thermal imager will be better. At low operating temperatures, objects under observation (background) normally cool down to roughly identical temperatures, which leads to lower temperature contrast, and to image quality (precision) degradation. This is normal for thermal imaging device.	
Rangefinder will not measure distance.	There is an object in front of the receiver or emitter lens preventing signal transmission.	Make sure that: the lenses are not blocked by your hand or fingers; the lenses are clean.
	The device is not being held steadily when measuring.	Do not stress the device when measuring.
	Distance to the object exceeds 1000 m.	Pick an object at a distance longer than 1000m.
	Low reflection ratio (for example, tree leaves).	Pick an object with higher reflection ratio (see point **"Peculiarities of operation"** in section 14.
Large measurement error.	Inclement weather conditions (rain, mist, snow).	

Follow the link to read FAQs on thermal vision
http://www.pulsar-nv.com/support/faq/