

HYDRA



Day Night Technologies

User Manual

HYDRA-LRF

Multi-Function Thermal Scope

Note: *To ensure the best experience, please keep your firmware up to date. Some updates may not yet be reflected in this manual.*

For the latest User Manual and firmware updates, please visit
dntoptics.com

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READ BEFORE USE

Safety Instructions

- **DO NOT** point the device at strong heat sources such as the sun or open flames, as this may damage the thermal sensor.
- Close the objective lens cap when the device is not in use.
- Device operating temperature: -20 to 50°C (-4 to 122°F).
- **DO NOT** attempt to disassemble the scope. Please contact us if there are any malfunctions.

Power Supply

HYDRA is powered by an external 18650 battery and provides up to 5.5 hours of operation (depending on the model). When the battery is low, it must be replaced. A 5-volt USB-C external power source can also be used to power the device directly.

***Note:** HYDRA does not support charging the battery via the USB-C port. To charge the battery, please use an external battery charger.*

Package Contents

HYDRA-LRF × 1	Microfiber Cloth × 1
DNT PMS Mount × 1	Threaded Eye Cup × 1
USB-C Data Cable × 1	HYDRA-LRF Quick Start × 1
HYDRA User Manual × 1	Flip Up Cover × 1

Glossary

Long-press: Press and hold the button for 2 seconds.

Double-press: Press and release the button twice in rapid succession.

Bolded Controls: Control instructions are marked in **bold** for easier reading. (e.g. **Menu Button**)

[Menu Items]: Menu items are enclosed in square brackets to indicate menu navigation steps clearly.

Menu navigation steps are shown in the following format:

[Main Menu] > [Reticle Settings] > [Reticle Colors] > [Red]

This means you first select [Reticle Settings] from the [Main Menu], then choose [Reticle Colors], and finally select [Red].

Live View: Refers to the main screen where live video is displayed. It is the default screen HYDRA enters when powered ON.

Menu: Refers to the screen where menu items are displayed, including the main menu and sub-menus. The live video remains visible in the background while navigating the menus.

INTRODUCTION

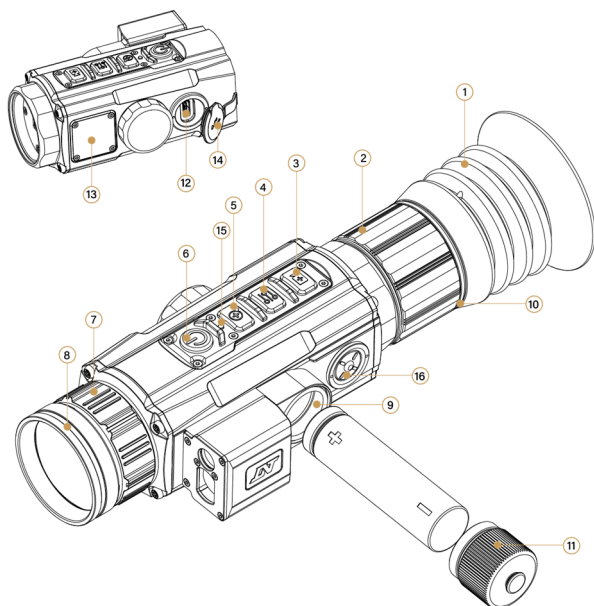
The HYDRA series consists of modular thermal scopes designed for 24/7 operation in all weather conditions. These scopes can function as standalone units, handheld thermal spotters, or thermal clip-ons for LPVOs (Low Power Variable Optics) and low power prism scopes. The HYDRA-LRF models are equipped with an integrated laser rangefinder and ballistic calculator, ensuring precise shot placement.

With its versatile features, the HYDRA series delivers reliable performance, making it the ideal choice for hunters, shooters, and outdoor enthusiasts.

Features

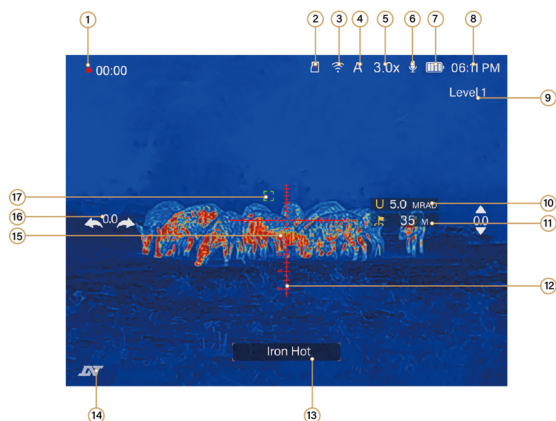
- **≤18 mK NETD Thermal Sensor**
- **3-in-1 Multi-Function Thermal Device**
- **Thermal Image Super Resolution**
- **Ultra Compact & Lightweight**
- **18650 Li-Ion Rechargeable Battery**
- **Micro-OLED 1024×768 Display at 50 Hz**
- **One-Shot Zeroing**
- **Picture-in-Picture (PiP) Aiming Window**
- **Precision Ranging with Built-in Ballistic Calculator**

Device Overview



1. Eye Cup	9. Battery Compartment
2. Diopter-adjustment Ring	10. Ocular Lens
3. Record Button	11. Battery Cap
4. Menu Button	12. USB-C Port
5. Zoom Button	13. Wi-Fi Module
6. Power Button	14. USB-C Port Cover
7. Focus-adjustment Ring	15. Power Indicator
8. Objective Lens	16. Ranging Button

On-Screen Display



1. Recording Indicator*	10. Ballistic Solution
2. Storage Error Indicator*	11. Ranging Result
3. Wi-Fi Indicator*	12. Reticle
4. Current Ballistic Profile	13. Current Palette / Imaging Mode*
5. Current Magnification	14. DNT Logo
6. Microphone Indicator*	15. Holdover Marker*
7. Current Battery Level	16. Roll Angle Indicator (Left)
8. Current Time	Vertical Angle Indicator (Right)
9. Screen Brightness Level	17. LRF Marker

Recording Indicator: Indicates the recording status. The timer shows the current video recording duration.

Storage Error Indicator: Indicates when an internal storage error has occurred.

Wi-Fi Indicator: Indicates Wi-Fi is ON. No display when Wi-Fi is OFF.

Microphone Indicator: Indicates whether the recorded video has sound. (A mute icon  is displayed when the microphone is OFF.)

Current Palette / Imaging Mode: Indicates current thermal palette or thermal imaging mode. It briefly appears after palette or imaging mode is changed.

Holdover Marker: Indicates the calculated holdover point of aim (POA). It appears only when the [Holdover] aiming method is selected.

Specifications

SPEC. / MODEL	HS225R	HS335R
Thermal Sensor Specifications		
Sensor Resolution	256 × 192 pixels	384 × 288 pixels
Sensor Type	Uncooled Infrared Sensor	
Sensor Frame Rate	50 fps	
Pixel Size	12 × 12 μm	
NETD Noise Equivalent Temperature Difference	≤25 mK (@25°C / 77°F)	≤18 mK (@25°C / 77°F)
Optical Specifications		
Focal Length of Objective Lens	25 mm	35 mm
Base Magnification	3x	
Digital Zoom	3x, 4.5x, 6x, 9x, 12x	
Field Of View (FOV) Horizontal / Vertical / Diagonal	7.0° / 5.3° / 8.8°	7.5° / 5.7° / 9.4°
Linear FOV m @ 100m / yd @ 100 yd Horizontal / Vertical / Diagonal	12.3 / 9.2 / 15.4	13.2 / 9.9 / 16.5
Eye Relief	65 mm / 2.6 in	
Display Specifications		
Display Type	Micro-OLED	
Display Resolution	1024 × 768 pixels	
Display Refresh Rate	50 Hz	
Power Specifications		
Battery Type	18650 Battery (Flat-top)	
Operating Time	5.5 h	4.5 h
External Power Supply	5 V USB-C	
Physical Specifications		

SPEC. / MODEL	HS225R	HS335R
Net Weight	407 g / 14.4 oz	424 g / 15.0 oz
Total Weight Incl. Battery and Mount	603 g / 21.3 oz	621 g / 21.9 oz
Dimensions	202 × 68 × 50 mm 8.0 × 2.7 × 2.0 in	196 × 68 × 50 mm 7.8 × 2.7 × 2.0 in
Operating Temperature	-20 to 50°C / -4 to 122°F	
Ingress Protection Rating	IP 67	
Recoil Rating	800 Gs / .50 BMG	
System Specifications		
Ranging Distance	5–1200 m / 5–1300 yd	
Storage	Built-in Storage, 32 GB	
Recording Format	1024 × 768 pixels @ 50 fps*	
Connections	Wi-Fi / DNT App	

***Recording Format:** Refers to the resolution and frame rate of the recorded video file; image quality will vary depending on the sensor resolution.*

SPEC. / MODEL	HS635R	HS650R
Thermal Sensor Specifications		
Sensor Resolution	640 × 512 pixels	
Sensor Type	Uncooled Infrared Sensor	
Sensor Frame Rate	50 fps	
Pixel Size	12 × 12 μm	
NETD Noise Equivalent Temperature Difference	≤18 mK (@25°C / 77°F)	
Optical Specifications		
Focal Length of Objective Lens	35 mm	50 mm
Base Magnification	1.5x	2.5x

SPEC. / MODEL	HS635R	HS650R
Digital Zoom	1.5x, 2.25x, 3x, 4.5x, 6x	2.5x, 3.5x, 5x, 7.5x, 10x
Field Of View (FOV) Horizontal / Vertical / Diagonal	12.5° / 10.0° / 16.0°	8.8° / 6.6° / 11.2°
Linear FOV m @ 100m / yd @ 100 yd Horizontal / Vertical / Diagonal	21.9 / 17.6 / 28.1	15.4 / 11.5 / 19.7
Eye Relief	65 mm / 2.6 in	
Display Specifications		
Display Type	Micro-OLED	
Display Resolution	1024 × 768 pixels	
Display Refresh Rate	50 Hz	
Power Specifications		
Battery Type	18650 Battery (Flat-top)	
Operating Time	4 h	
External Power Supply	5 V USB-C	
Physical Specifications		
Net Weight	424 g / 15.0 oz	516 g / 18.2 oz
Total Weight Incl. Battery and Mount	621 g / 21.9 oz	713 g / 25.2 oz
Dimensions	201 × 68 × 50 mm 7.9 × 2.7 × 2.0 in	212 × 68 × 77 mm 8.4 × 2.7 × 2.2 in
Operating Temperature	-20 to 50°C / -4 to 122°F	
Ingress Protection Rating	IP 67	
Recoil Rating	800 Gs / .50 BMG	
System Specifications		
Ranging Distance	5–1200 m / 5–1300 yd	
Storage	Built-in Storage, 32 GB	
Recording Format	1024 × 768 pixels @ 50 fps*	
Connections	Wi-Fi / DNT App	

Recording Format: Refers to the resolution and frame rate of the recorded video file; image quality will vary depending on the sensor resolution.

Download the DNT App to Unlock More Features

Scan the QR codes below to download the DNT App and connect your device to your smartphone.

By connecting your HYDRA-LRF to your smartphone, you can view the scope's live video feed in real time and manage, edit, or transfer recordings directly from your smartphone.



Android 9.0 and above

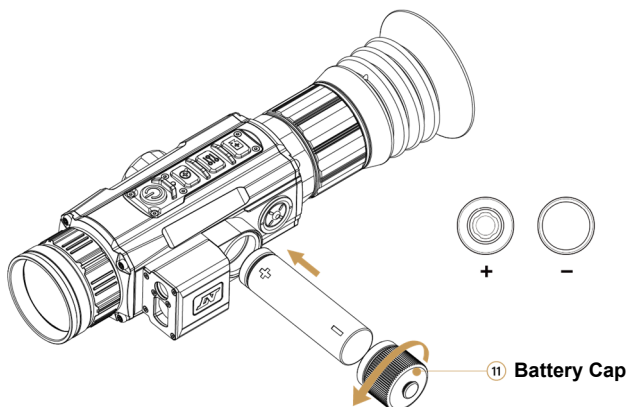


iOS 12.0 and above

START USING

This part covers everything you need to know to get your HYDRA-LRF ready to use for the first time.

Installing Battery



1. Twist the **Battery Cap** counterclockwise to remove it.
2. Insert the 18650 battery into the **Battery Compartment**, with the positive (+) end facing inward.
3. Press the **Battery Cap** against the battery's negative (–) end and twist it clockwise until fully tightened.

Quick Start

In Live View



Power Button



- | | | |
|-------------------|---|----------------------------|
| PRESS | → | Toggle Standby Mode ON/OFF |
| LONG-PRESS | → | Turn HYDRA-LRF ON/OFF |

Record Button



- | | | |
|---------------------|---|---|
| PRESS | → | Start/End Recording |
| LONG-PRESS | → | Trigger Manual RAV (Recoil Activated Video) |
| DOUBLE-PRESS | → | Toggle Clip-On Mode |

Menu Button



- | | | |
|---------------------|---|---|
| PRESS | → | Cycle through Four Thermal Palettes |
| LONG-PRESS | → | Enter [Main Menu] |
| DOUBLE-PRESS | → | Cycle through Three Thermal Imaging Modes |

Zoom Button



- | | | |
|---------------------|---|--|
| PRESS | → | Cycle through Five Zoom Levels |
| LONG-PRESS | → | Cycle through Five Brightness Levels |
| DOUBLE-PRESS | → | Trigger Manual NUC (Non-Uniformity Correction) |

Ranging Button



- | | | |
|------------------------------|---|--|
| PRESS | → | Turn Ranging ON |
| PRESS
When Ranging | → | Perform Ballistic Calculation (If BC is enabled) |
| LONG-PRESS | → | Turn Ranging OFF |
-

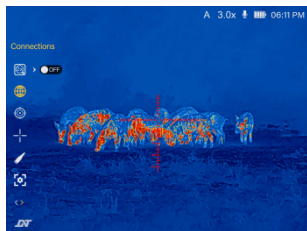
Menu Navigation

In Live View

Long-press **Menu Button** to enter [Main Menu].



Live View



Main Menu

In Menu (including the main menu and all sub-menus)

Press **Record Button** to navigate DOWN.

Press **Zoom Button** to navigate UP.

*Selected menu items will turn **YELLOW**; their names will be presented at the top of the menu list.*

Press **Menu Button** to navigate FORWARD.

This will either confirm the current selection to bring up the next menu pane, toggle functions ON/OFF, or lock in on a menu item for value changes.

Long-press **Menu Button** to navigate BACKWARD.

This will return to the previous menu pane, and, while in Main Menu, return to Live View.

When Changing Values

Press **Zoom Button** to INCREASE the value.

Press **Record Button** to DECREASE the value.

In certain sub-menus, such as [Date/Time], press Menu Button to cycle through adjustable values.

Diopter and Focus Adjustments

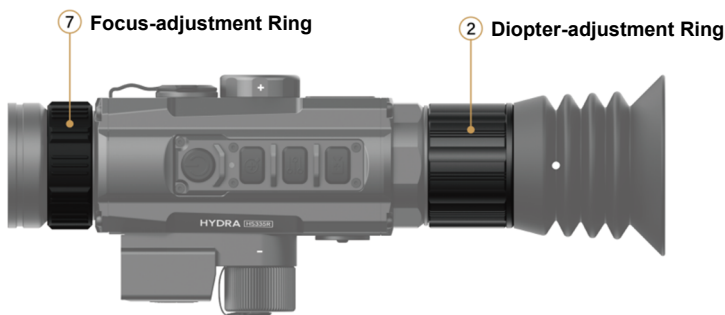
Diopter Adjustment

This adjustment helps achieve the best screen clarity for your eye and is independent of the target (therefore, you can set it even with the objective lens cap closed).

Look through the **Ocular Lens** from about 65 mm / 2.6 in away. You should see the entire screen, although it may not yet be adjusted for your eyes.

Slowly rotate **Diopter-adjustment Ring** clockwise or counter-clockwise until you achieve the best screen clarity.

Once set, no further adjustment is needed.



Focus Adjustment

You may need to adjust the focus to achieve optimal clarity when viewing targets at different ranges.

Make sure your diopter is adjusted, and you have perfect vision of the screen.

If the screen can't display the target clearly, slowly rotate **Focus-adjustment Ring** clockwise or counterclockwise until the screen displays the target perfectly clear.

Zeroing HYDRA-LRF

■ Zeroing Menu



To Enter the Zeroing Menu

[Main Menu] > [Zeroing]

In Zeroing Menu, press **Power Button** to freeze/unfreeze the current image or select [Freeze] and toggle with **Menu Button**.

Select [Zeroing Profile] to switch among 10 onboard profiles.

Select [X] and [Y] to adjust the horizontal and vertical positions of the reticle respectively.

Press **Zoom Button** or **Record Button** to navigate UP or DOWN.

Press **Menu Button** to select an item and start adjusting the value.

Press **Zoom Button** or **Record Button** to INCREASE or DECREASE the value.

Select [Save] to save and exit; Select [Exit] to exit without saving.

■ Zeroing in Scope Mode

1. Make sure the HYDRA-LRF is tightly mounted and held steady.
2. Enter the Zeroing Menu:

[Main Menu] > [Zeroing]

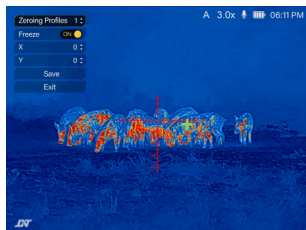


Figure 1

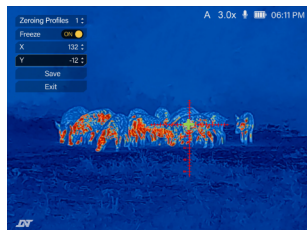


Figure 2

3. Find/Place a target at your desired zero distance (DNT recommends 50 yards/meters). Adjust focus and zoom to get a clear sight.
4. Use the center of the reticle as POA, and acquire your POI (illustrated as + on **Figure 1**).
5. Move the center of the reticle back to the POA, then freeze the image.
6. In [X] and [Y], adjust the position of the reticle so that its center matches the POI +, as shown in **Figure 2**.
7. Select [Save] and confirm to save and exit. Your new POA is now zeroed with the POI at your selected distance.

FUNCTIONS

This chapter will explain in detail the main features and functions that HYDRA-LRF includes, to help you master the operation of your device.

Power

■ Powering On/Off HYDRA-LRF

Long-press **Power Button** to power ON/OFF the device.

Note: *The power status of this device is indicated by the **Power Indicator**:*

*When the device is powered on and operating, the **Power Indicator** will shine **BLUE**.*

*When the device is in Standby Mode, the **Power Indicator** will shine **ORANGE**.*

*When performing an OTA firmware update, the **Power Indicator** will flash **ORANGE**.*

■ Standby Mode On/Off

When HYDRA-LRF is powered ON and not in Menu, press **Power Button** to toggle Standby Mode ON/OFF.

Note: *To maximize battery life during your session, enable Standby Mode whenever the device is idle. Resuming from Standby Mode will take less than 3 seconds.*

If HYDRA-LRF is recording, enabling Standby Mode will stop and save the current recording. Once you turn Standby Mode OFF, HYDRA-LRF will automatically start recording a new clip. This is ideal for users who want to capture all active moments throughout their sessions.

■ Auto Power-Off

HYDRA-LRF comes with an Auto Power-Off function, which will automatically turn off the device after it enters Standby Mode for a set duration (10, 20, or 30 minutes). By default, this function is not enabled. You can set it up through:

[Main Menu] > [Function Settings] > [Auto Power Off]

***Note:** DNT recommends enabling Auto Power-Off to maximize battery efficiency and avoid unwanted battery drain.*

Display

■ Adjusting Screen Brightness

In Live View, long-press **Zoom Button** to cycle through five Brightness levels.

■ Zooming In/Out

In Live View, press **Zoom Button** to cycle through five Zoom Levels.

■ PiP Settings

[Main Menu] > [PiP Settings]

In PiP mode, the small window size defaults to 10% of the large window. For PiP window position, you can choose from [Left] / [Center] / [Right]. To disable the PiP window, select [Off].

■ Clip-On Mode

In Clip-On Mode, HYDRA-LRF is intended to be used as a thermal clip-on for your Low Powered Variable Optics (LPVOs), prisms, or other low-magnification optics. This mode hides the reticle and shrinks the device UI to accommodate the field of view (FOV) of glass optics. In Clip-on Mode, [Zeroing] will be replaced by [Clip-On Zeroing], allowing you to adjust the position of the Live View in the FOV of glass optics.

***Note:** Thermal devices cannot see through glass, so ensure HYDRA is mounted in front of your LPVO, prism, or other low-magnification optic.*

To Activate Clip-On Mode:

[Main Menu] > [Clip-On Mode] > [ON]

Or

Double-press Record Button to toggle Clip-On Mode.

■ Clip-On Zeroing

In Clip-On Mode, [Zeroing] becomes [Clip-On Zeroing]. Unlike adjusting the position of the digital reticle when zeroing in Scope Mode, zeroing HYDRA-LRF in Clip-On Mode adjusts the position of HYDRA-LRF's display so that the Point of Impact (POI) shown on HYDRA-LRF's screen matches the Point of Aim (POA) of your zeroed glass optic.



Figure 1

1. Make sure HYDRA-LRF is tightly mounted and that your glass optic is already zeroed.
2. Rotate the Ocular to the zero mark, and make sure the edge of the **Diopter-adjustment Ring** aligns with the vertical line shown in **Figure 1**.
3. Slowly rotate the **Diopter-adjustment Ring** until you get the clearest view of HYDRA-LRF's screen though the glass optic.
4. Enter [Clip-On Zeroing]:

[Main Menu] > [Clip-On Zeroing]

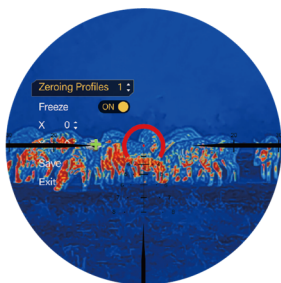


Figure 2

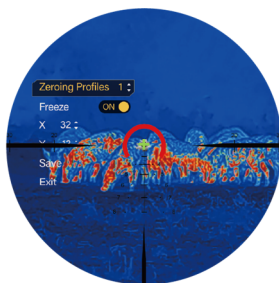


Figure 3

5. Find/Place a target at your desired zeroing distance (DNT recommends 50 yards/meters). Adjust focus on HYDRA-LRF until the target appears in clear view.
6. Use the center of the reticle in your glass optic as POA, and acquire your POI (illustrated as + on Figure 2).
7. Move your glass optic reticle back to the POA, then freeze the image.
8. In [Clip-On Zeroing], use [X] and [Y] to adjust the position of HYDRA-LRF's screen display so that the POI + on the screen matches the center of your glass optic's reticle, as shown in Figure 3.
9. Select [Save] and confirm to save and exit. Your new POA is now zeroed with the POI at your selected distance.

Recording

■ Recording Start/End

In Live View, press **Record Button** to start recording. During recording, press **Record Button** to end the current recording. The recorded video will be saved in HYDRA-LRF's internal storage.

***Note:** Each video will last for a maximum of 10 minutes. Once the time limit is reached, the recording will stop automatically.*

Please closely monitor the available storage in your HYDRA-LRF through [Main Menu] > [System Settings] > [Available Storage]. Newly recorded videos will be saved even if storage is full. If the storage is full when new recordings are finished, recordings will be automatically deleted to free up space, from the oldest to the newest.

■ Loop Recording

To record your entire session, turn on Loop Recording through:

[Main Menu] > [Function Settings] > [Loop Recording]

In [Loop Recording], you can choose from [1 minute], [3 minutes], [5 minutes], or [Off]. Selecting any of these durations enables loop recording. When you press **Record Button** to start recording, the device will continuously record in fixed-length segments. Once the selected duration is reached, the recording automatically stops, saves the clip, and immediately starts a new one. This cycle continues until you press **Record Button** to stop.

■ Recoil Activated Video (RAV)

This feature automatically starts recording when significant recoil is detected. You can select among [Auto Mode], [Manual Mode], and [Off] through:

[Main Menu] > [Recoil Activated Video]

In RAV [Auto Mode]

When the recoil force reaches 450 Gs, the device automatically saves a video that includes 10 seconds before and after the shot. For optimal performance, DNT recommends using the RAV function with recoil stronger than .22LR.

In RAV [Manual Mode]

RAV will not trigger automatically. Instead, long-press **Record Button** to save a video that includes 10 seconds before and after the press.

Extending RAV Duration

Applicable to both Auto and Manual Modes: While RAV is recording, long-press **Record Button** to extend the RAV duration by 10 seconds. This extension can be repeated until the maximum duration of 120 seconds is reached.

■ Audio Recording

To record audio along with your video, enable this setting. It is enabled by default and can be toggled through:

[Main Menu] > [Function Settings] > [Audio Recording]

Thermal

■ Thermal Imaging Modes

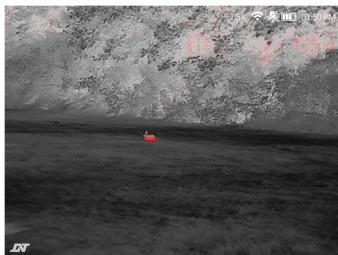
[Main Menu] > [Thermal Image Settings] > [Thermal Imaging Modes]

HYDRA-LRF provides three thermal imaging modes to accommodate different scenarios: [Natural Mode], [Enhanced Mode], and [Highlight Mode].



Natural Mode

This is the default thermal imaging mode, reproducing the thermal environment as accurately as possible. Smooth gradients between different temperature intervals can be observed.



Enhanced Mode

This mode increases the contrast between temperatures, providing finer details compared with Natural Mode. It is ideal for highlighting the outline of a target. However, this mode introduces more image noise than Natural Mode.



Highlight Mode

This mode suppresses less significant heat sources almost completely and emphasizes only the most significant targets, making it ideal for rapid target acquisition.

■ Thermal Palettes

HYDRA-LRF provides four different thermal palettes to accommodate preferences and ensure the most effective target acquisition under different circumstances.

To Change Thermal Palettes:

[Main Menu] > [Thermal Image Settings] > [Palettes]

Or

Press Menu Button to cycle through palettes.



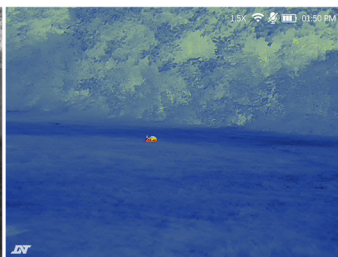
White Hot



Black Hot



Red Hot



Iron Hot

■ NUC (Non-Uniformity Correction)

All thermal devices periodically perform NUC to ensure accurate and consistent imaging. During NUC, the thermal shutter temporarily drops, and the thermal image will freeze for 1 to 5 seconds. This is completely normal.

While essential for maintaining consistent thermal imaging, NUC may temporarily interrupt device operation. To minimize disruption during critical moments, HYDRA-LRF offers two NUC modes: [Auto Mode] and [Manual Mode].

The default setting is [Auto Mode], you can switch modes through:

[Main Menu] > [Thermal Image Settings] > [Palettes]

In NUC [Auto Mode]

The thermal sensor monitors its status and performs NUC when needed.

A 5-second NUC countdown icon  will appear at the top of the screen before NUC commences, allowing you to plan your next steps accordingly.

In NUC [Manual Mode]

NUC will not trigger automatically. You can manually trigger NUC by double-pressing **Zoom Button**.

■ Thermal Contrast

Contrast adjustment effectively expands or compresses the range of the active color palette.

To Change Thermal Contrast:

[Main Menu] > [Thermal Image Settings] > [Thermal Contrast]

Increasing Contrast: “Stretches” the palette, making small temperature differences appear as distinct color changes. This highlights subtle faults but can make the image appear segmented.

Decreasing Contrast: “Compresses” the palette, making large temperature differences appear as gradual color shifts. This creates a smoother image but can mask minor anomalies.

■ Thermal Brightness

The thermal imager maps different temperatures to different colors. Brightness control adjusts the overall intensity level of this color map.

To Change Thermal Brightness:

[Main Menu] > [Thermal Image Settings] > [Thermal Brightness]

Increasing Brightness: Makes all temperature areas appear brighter. This may cause loss of detail in cooler, darker regions.

Decreasing Brightness: Makes all temperature areas appear darker. This may obscure details in hotter, brighter regions.

■ Thermal Sharpness

This feature applies a digital filter to the thermal data to enhance perceived clarity and definition.

To Change Thermal Sharpness:

[Main Menu] > [Thermal Image Settings] > [Thermal Sharpness]

Increasing Sharpness: Enhances edges and fine details, making small or subtle heat spots more visible and improving the definition of target outlines. This also amplifies image noise and graininess.

Decreasing Sharpness: Applies minimal edge enhancement, resulting in a smoother, softer image, but fine details may appear less defined.

■ Hotspot Tracking

[Main Menu] > [Thermal Image Settings] > [Hotspot Tracking]

When enabled, a red dot appears on the screen to indicate the hottest spot in the current image.

Ranging

■ Ranging Modes

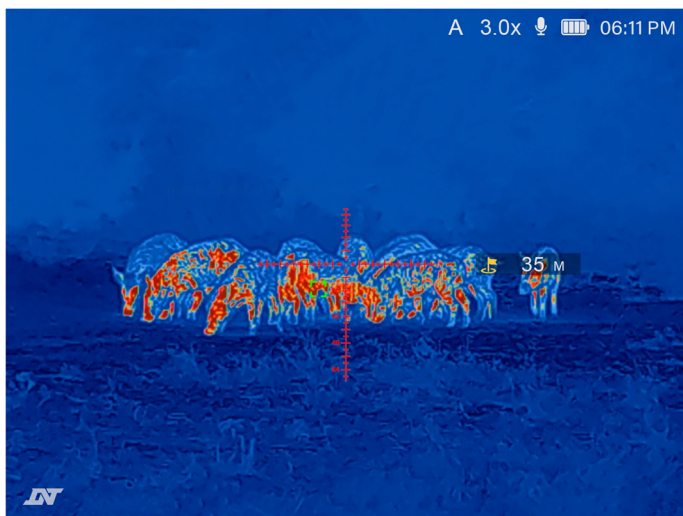
Continuous Ranging

[Main Menu] > [LRF Settings] > [Ranging Modes] > [Continuous Ranging]

Press **Ranging Button** to turn on ranging. The screen will display the ranging icon and target distance.

As the distance to the target changes, the range displayed will update in real time.

To turn off ranging, long-press **Ranging Button**.



Single Pulse Ranging

[Main Menu] > [LRF Settings] > [Ranging Modes] > [Single Pulse Ranging]

Press **Ranging Button** to turn on ranging.

The screen will display the ranging icon and the target distance.

Regardless of whether a distance is successfully measured, only one ranging operation is performed per press.

Press **Ranging Button** again to initiate a new measurement.

To turn off ranging, long-press **Ranging Button**, or it will automatically turn off after 20 seconds of inactivity.

Timed Ranging

[Menu] > [LRF Settings] > [Ranging Modes] > [Timed Ranging 3s / 5s / 10s]

Press **Ranging Button** to turn on ranging. The screen will display the ranging icon and the target distance.

The target range will remain displayed for the selected duration.

Pressing **Ranging Button** again during this period will reset the timer and restart ranging.

Once the time expires, the ranging function will turn off automatically.

Ballistic Calculation

Toggling Ballistic Calculation

[Main Menu] > [Ballistic Calculator]

In the Ballistic Calculator interface, select the first option (ON/OFF), then press **Menu Button** to toggle ballistic calculation.

Ballistic Data Settings

This sub-menu stores five Ballistic Data profiles (A-E). You can edit them on-board or through the DNT App.

[Main Menu] > [Ballistic Calculator] > [Ballistic Data Settings]

Navigate with **Record Button** or **Zoom Button**.

Press the **Menu Button** to confirm selection.

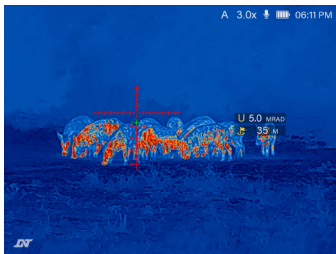
Press **Record Button** or **Zoom Button** to adjust values.

Long-press **Menu Button** to save and exit the current screen.

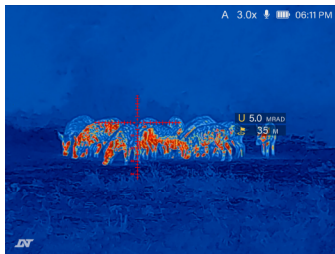
Aiming Method

HYDRA-LRF will display Ballistic Solutions in two different Modes: Holdover and Dial In. You can switch between them through:

[Main Menu] > [Ballistic Calculator] > [Aiming Method]



Aiming Mode – Holdover



Aiming Mode – Dial In

Displaying Ballistics

[Main Menu] > [Ballistic Calculator] > [Display Ballistics]

Use **Record Button** or **Zoom Button** to select the unit for the ballistic solution.

Press **Menu Button** briefly to confirm the selection.

To turn off ballistic display, select [Off].

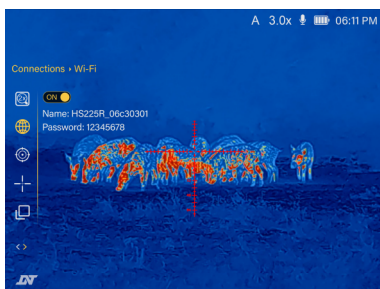
Connections

■ Connecting to the DNT App

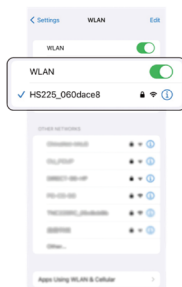
1. Turning on the device Wi-Fi:

[Main Menu] > [Connections] > [Wi-Fi] > [On]

2. In your phone's Settings, turn on Wi-Fi, find the device's Wi-Fi name, and enter the corresponding password (normally 12345678) to connect your phone to the device Wi-Fi.

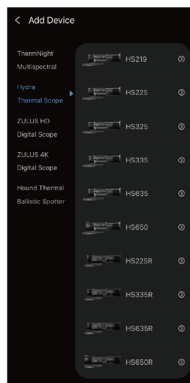
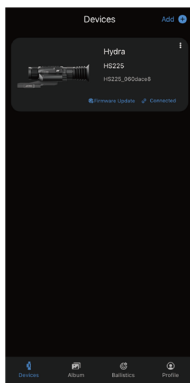


Wi-Fi Menu



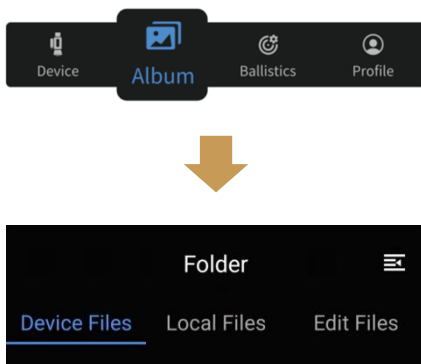
WLAN Settings

3. Open the DNT App, tap [Add Device], select [Hydra Thermal Scope], find your model, and tap it to add. This will take you to WLAN settings.



■ Accessing Recorded Videos via the DNT App

In the DNT App, under the [Album] tab, there are three sections: [Device Files], [Local Files], and [Edit Files].



Device Files

This is where all recorded videos are stored. You can only access these files when the device is connected to your phone via Wi-Fi.

Local Files

This is where videos saved from the device are stored within the app. Tap a video to preview it, then use the four buttons in the upper right corner to **edit** (Merge, Trim, Slow), **save** it to your phone/tablet's album, **share** it on social media, or **delete** it.

Edit Files

This section displays videos that have been edited using the Merge, Trim, or Slow functions. You can perform the same actions as in Local Files: **edit** again, **save** to album, **share**, or **delete**.

Button Icon	Button Name	Function Description
	Edit	Edit the video (Merge, Trim, Slow).
	Save to Album	Save the video to your phone or tablet's album.
	Share	Share the video on social media platforms.
	Delete	Delete the video.
	Save to Local Files	Save the video from Device Files to Local Files in the app.

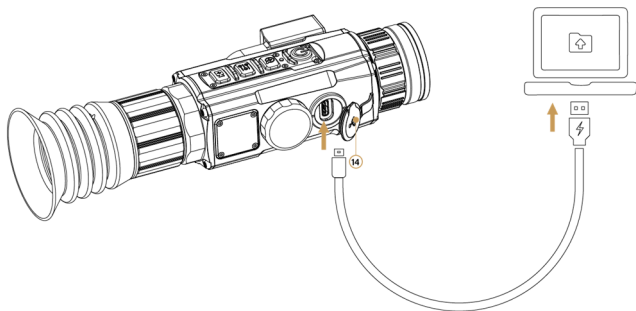
To Save Videos to Local Files

In the [Device Files] and [Edit Files] tabs, select the video you want, and tap the **Save to Local Files** button in the upper right corner to save it to [Local Files]. Once saved, you can access the video within the app even when the device is disconnected.

To Save Videos to Your Phone/Tablet's Album

First, save the video from [Device Files] to [Local Files]. Then, go to [Local Files], open the video you want, and tap the **Save to Album button** in the upper right corner to save it to your phone or tablet's album. You can also save edited videos by following the same steps from the [Edit Files] section.

■ USB-C Connection



Connecting HYDRA-LRF with your PC/Mac via a USB-C data cable.

HYDRA-LRF will appear on your computer as a USB drive where you can manage your recordings.

APPENDIX

Table of Controls

Button / Control	Status	Short-Press	Long-Press	Double-Press
Power Button 	Power-Off	--	Power ON Device	--
	Power-On	Enter Standby	Power OFF Device	--
	Standby	Exit Standby	--	--
	Zeroing Menu	Freeze / Unfreeze	--	--
Menu Button 	Power-On	Cycle Thermal Palettes	Enter Main Menu	Cycle Thermal Imaging Modes
	Menu	Confirm	Return	--
	Changing Value	Confirm	Return	
	Date / Time	Cycle Variables	--	--
Zoom Button 	Power-On	Cycle Zoom Levels	Cycle Brightness Levels	Start Manual NUC
	Menu	Navigate UP	--	--
	Changing Value	Increase Value	--	--
Record Button 	Power-On	Start / Stop Recording	Start RAV (When set to RAV Manual)	Toggle Clip-On Mode
	Menu	Navigate DOWN	--	--
	Changing Value	Decrease Value	--	--

Table of Menus

Icon	Description
	Clip-On Toggle [ON] / [OFF]
	(Default magnification: HS635: 1x; HS219 / HS225 / HS325 / HS335 / HS650: 2x)
	Connections Turn Wi-Fi [ON] / [OFF]
	Zeroing Open Zeroing Menu
	Reticle Settings Reticles: [1-FFP] / [2-FFP] / [3-SFP] / [4-SFP] / [5-SFP] / [6-SFP] / [7-SFP] / [8-SFP] / [Hide] Reticle Colors: [Red] / [Green] / [Yellow] / [Black] / [White]
	PIP Settings [Off] / [Left] / [Center] / [Right]
	Ballistic Calculator [ON] / [OFF] Ballistic Data Settings: Choose and edit profiles. Aiming Method: [Holdover] / [Dial In] Display Ballistics: [MRAD] / [MOA] / [cm] / [inches]
	LRF Settings Ranging Modes: [Continuous Ranging] / [Single Pulse Ranging] / [Timed Ranging 3 / 5 / 10s] Ranging Units: [Meter] / [Yard]
	Recoil Activated Video Toggle [ON] / [OFF]
	Image Super Resolution Toggle [ON] / [OFF]
	Thermal Image Settings Thermal Imaging Mode: [Natural] / [Enhanced] / [Highlight] NUC: [Auto Mode] / [Manual Mode] Palettes: [White Hot] / [Black Hot] / [Red Hot] / [Iron Hot] Image Contrast: 1-5 Image Brightness: 1-5 Image Sharpness: 1-5 Hotspot Tracking: Toggle [ON] / [OFF]

Icon	Description
	Function Settings Defective Pixel Repair: Move the cursor to the defective pixel for repair. Auto Power Off: Auto shutdown time after entering Standby Mode: [Off] / [10 / 20 / 30 minutes] Loop Recording: [Off] / [1 / 3 / 5minutes] Audio Recording: [ON] / [OFF] Gyroscope: [ON] / [OFF] / [Calibration] Screen Brightness: 1-5
	System Settings Date / Time Language Setting: [English] / [Français] / [Español] / [Deutsch] / [Italiano] Format Restore Default Settings Available Storage Version

FCC WARNING

This device complies with Part 15 of the 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 undesired operation.

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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 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.

To maintain compliance with FCC's RF Exposure guidelines, this equipment must be installed and operated with a minimum distance of 20cm between the radiator and your body. Use only the supplied antenna.





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