



OZ640/1280

User manual

Document Edition:

V1.0

The Manual for:

OZ640/1280 Camera

Date:

April 14, 2025

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Notes:
For technical support please contact Ex-Sight.Com at info@ex-sight.com.

section 1

SYSTEM OVERVIEW

Default IP/Address Values

- User name: admin
- Password: ex-sightonly1

Day IP Address: 192.168.1.68

Night IP Address: 192.168.1.67

LRF IP Address: 192.168.1.69

Day stream Camera:

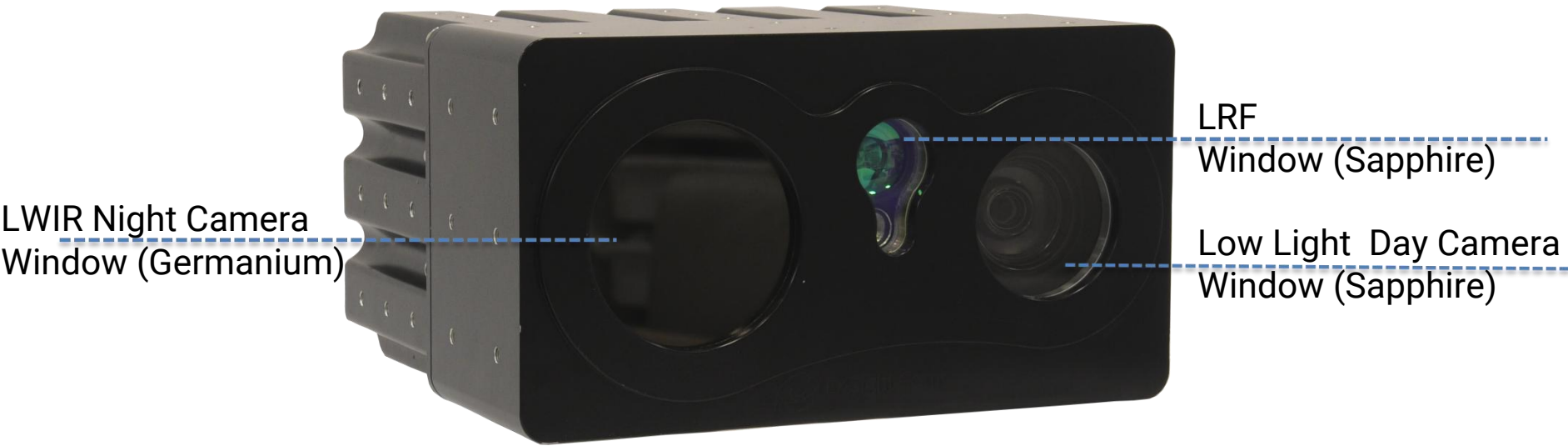
<DayCameraStream>rtsp://admin:12345@192.168.1.68:8554/0</DayCameraStream>

LWIR stream Camera:

<NightCameraStream>rtsp://[192.168.1.167:554/cam/realmonitor?channel=1&subtype=0](rtsp://192.168.1.167:554/cam/realmonitor?channel=1&subtype=0&unicast=true&proto=Onvif)
&unicast=true&proto=Onvif</NightCameraStream>

SYSTEM MAIN PARTS

Front View

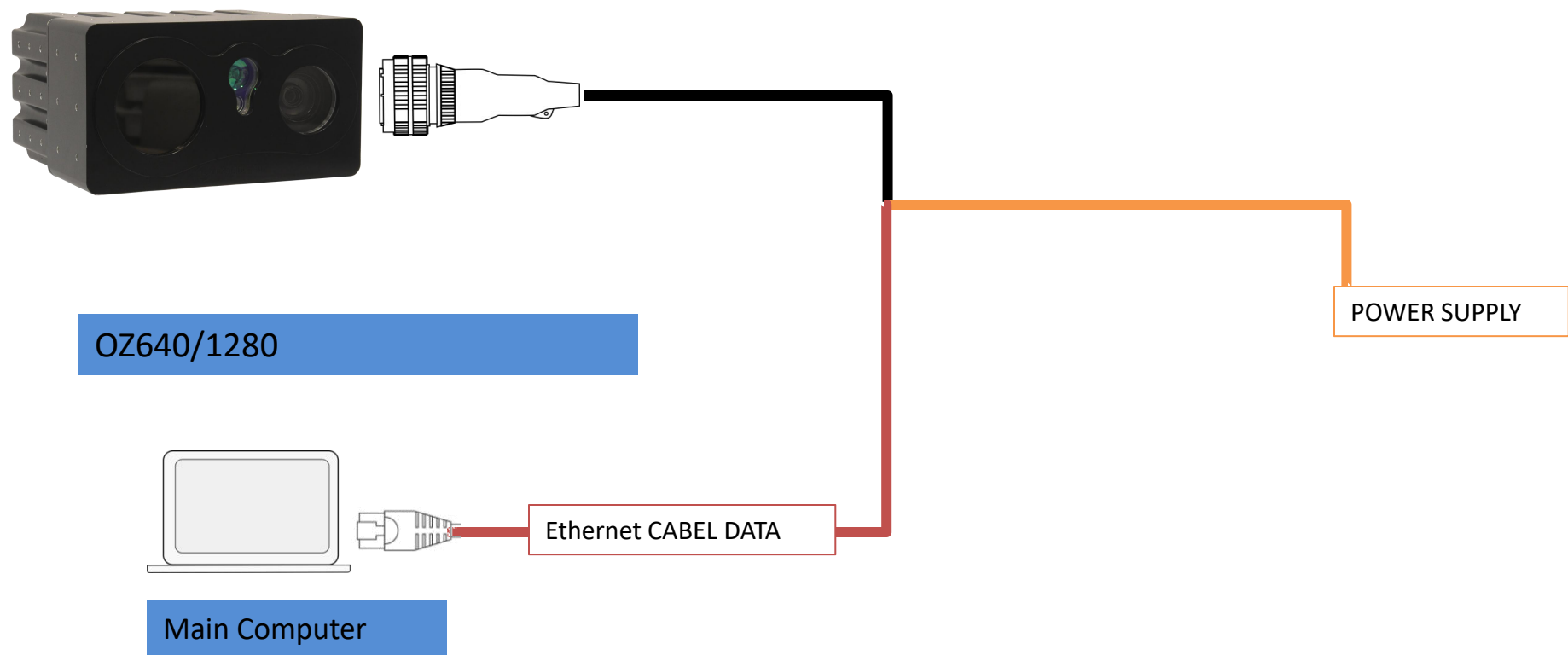


Rear View



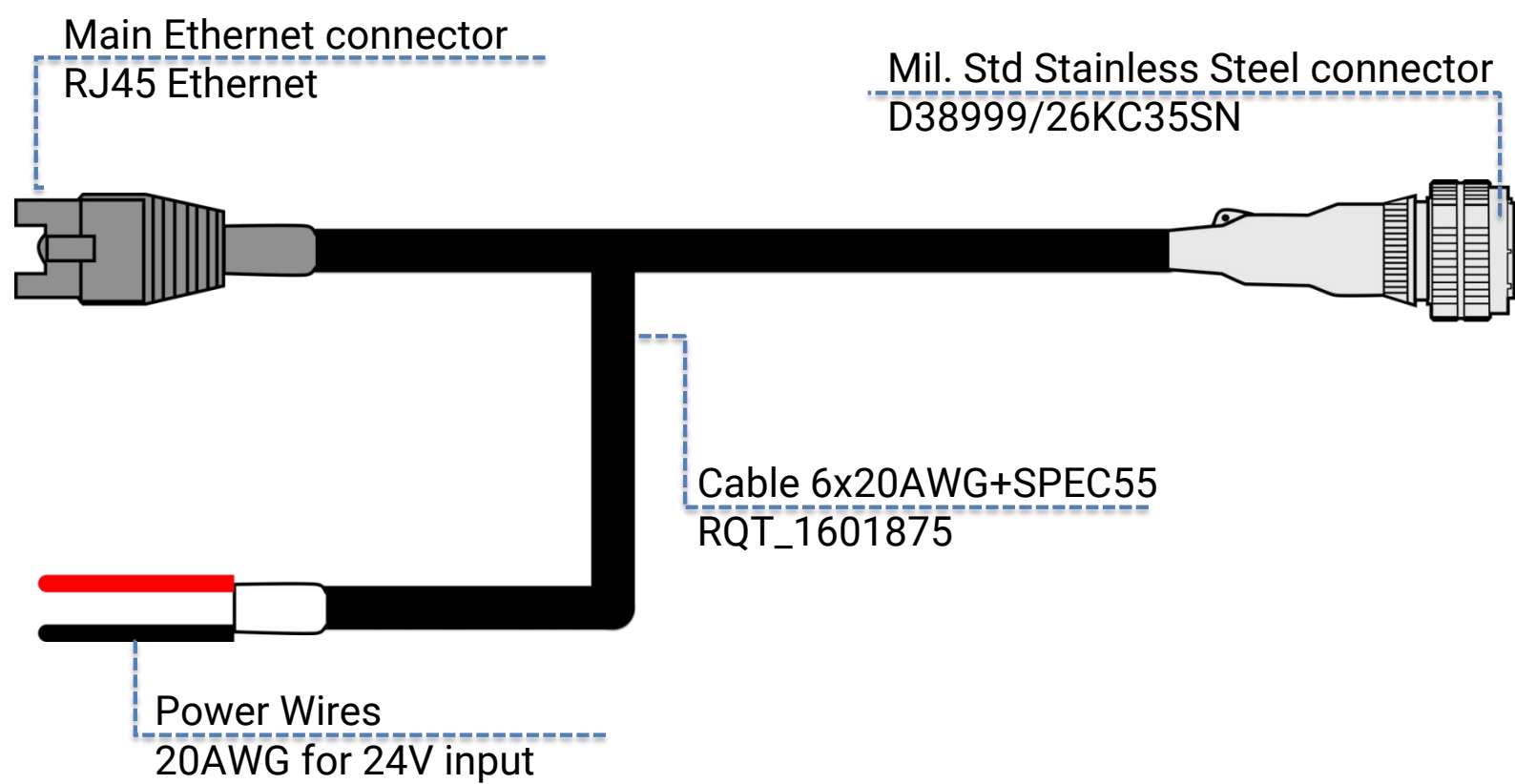
Notes:
"Day Camera" mentioned in this manual refers to Low light sensor
"Night Camera" mentioned in this manual refers to the LWIR Thermal sensor

Diagram 1.1



	TYPE	NAME
1	Cable connector	D38999/26KC35SN
2	24VDC	POWER SUPPLY
3	ETH RJ45 Ethernet	Ethernet DATA

SC CABLE MAIN PARTS)Single Cable(



section 2

SYSTEM ASSEMBLY USER MANUAL

SYSTEM CONNECTION

Detailed description of system connection

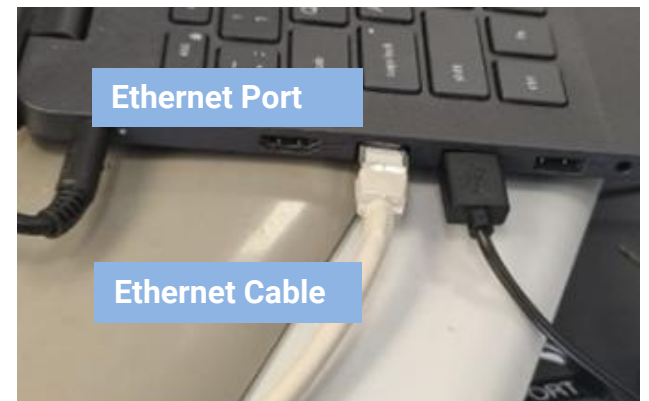
STEP 1 Place the OZ on a flat and stable surface.



STEP 2 Connect the **cable connector** (D38999/26KC35SN) on the Cable to the **panel connector** (D38999/23YC35PN) on the OZ then screw the **cable connector** clockwise until it closes .



STEP 3 Connect the Ethernet connection on the Cable to the Ethernet port on the computer.



STEP 4 Connect the **Power Wires** on the Cable to the **Power Source**.
The supplied voltage should be 9V-36VDC (we recommend 12VDC).



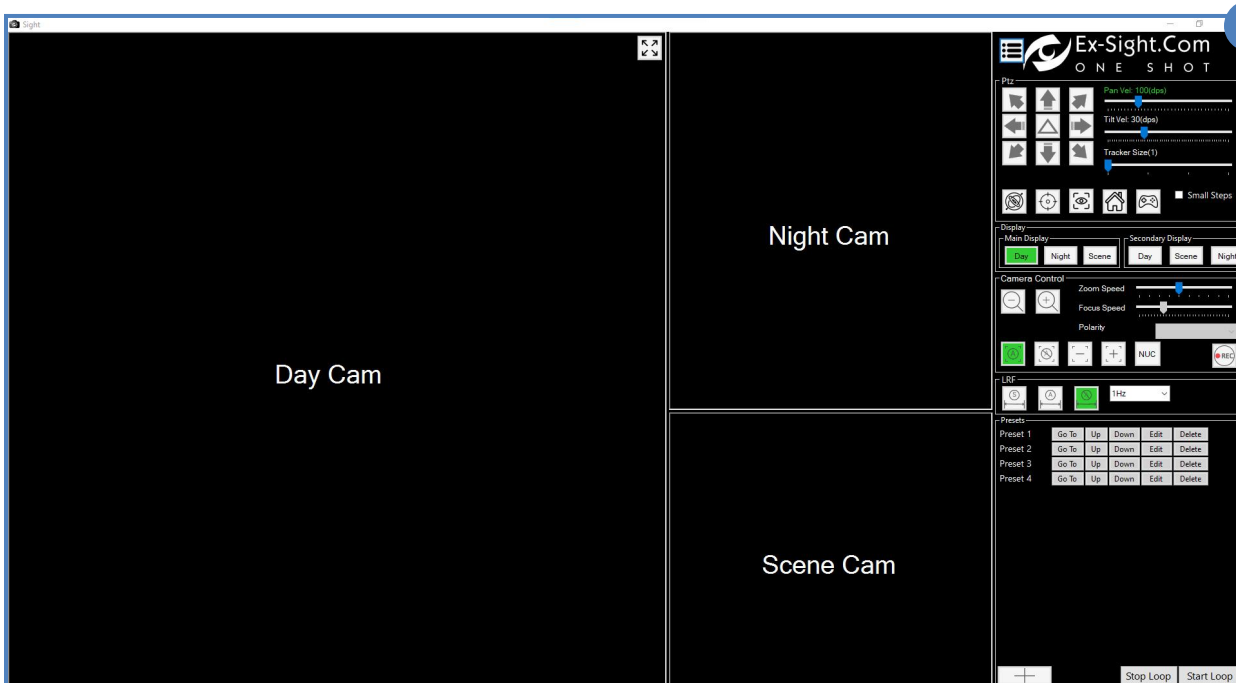
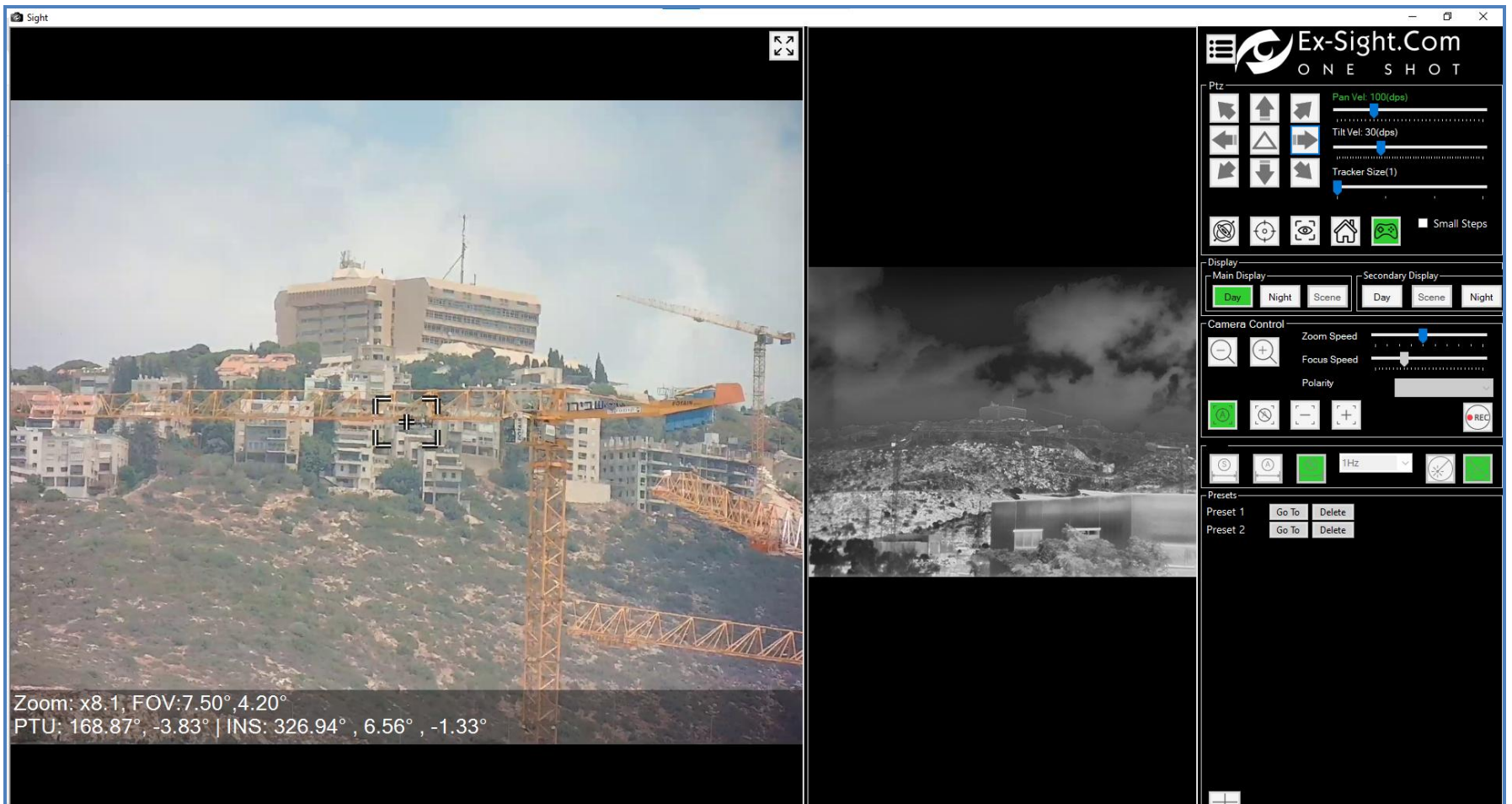
section 3

APPLICATION INSTALATION

GETTING STARTED

Before using OZ for the first time, download and install the **SightDesk** application. Using this application allows easy control of the OZ camera.

- 1 Link with the App Folder will be send to the client. When necessary Go to Ex-Sight Website: <https://www.ex-sight.com/support> (Support). Enter the access code. Double click on **SightDesk SOFTWARE DOWNLOAD** will start the app download process
- 2 **Go to:**  **Sight.exe** will automatically start the application.
- 3 Once the **SightDesk** is connected the default Screen will show **Day Camera and Night Camera** video stream at the same time.



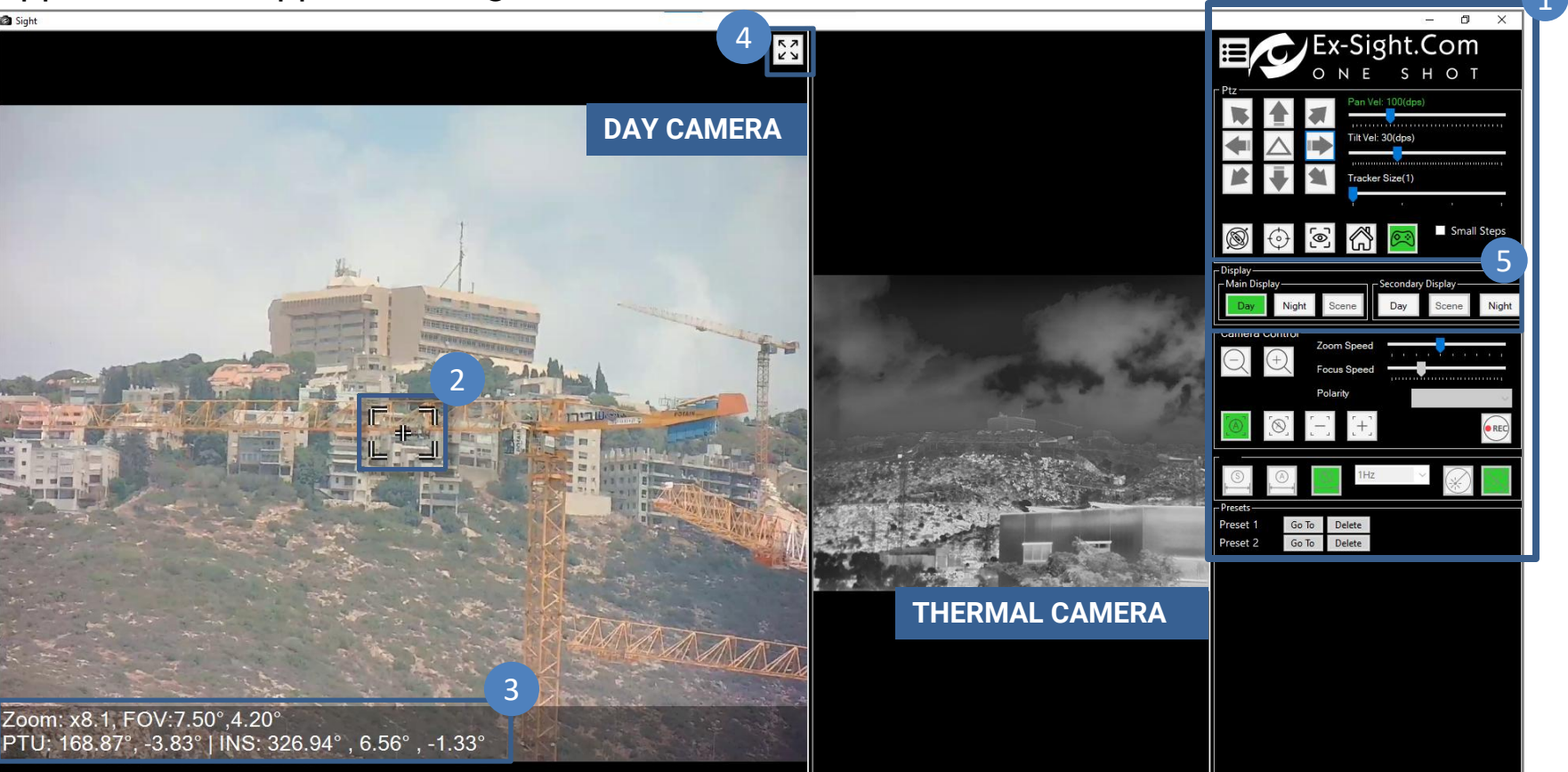
1 If the system/camera is **not connected**, the initial screen will appear as shown below (1).

Section 4

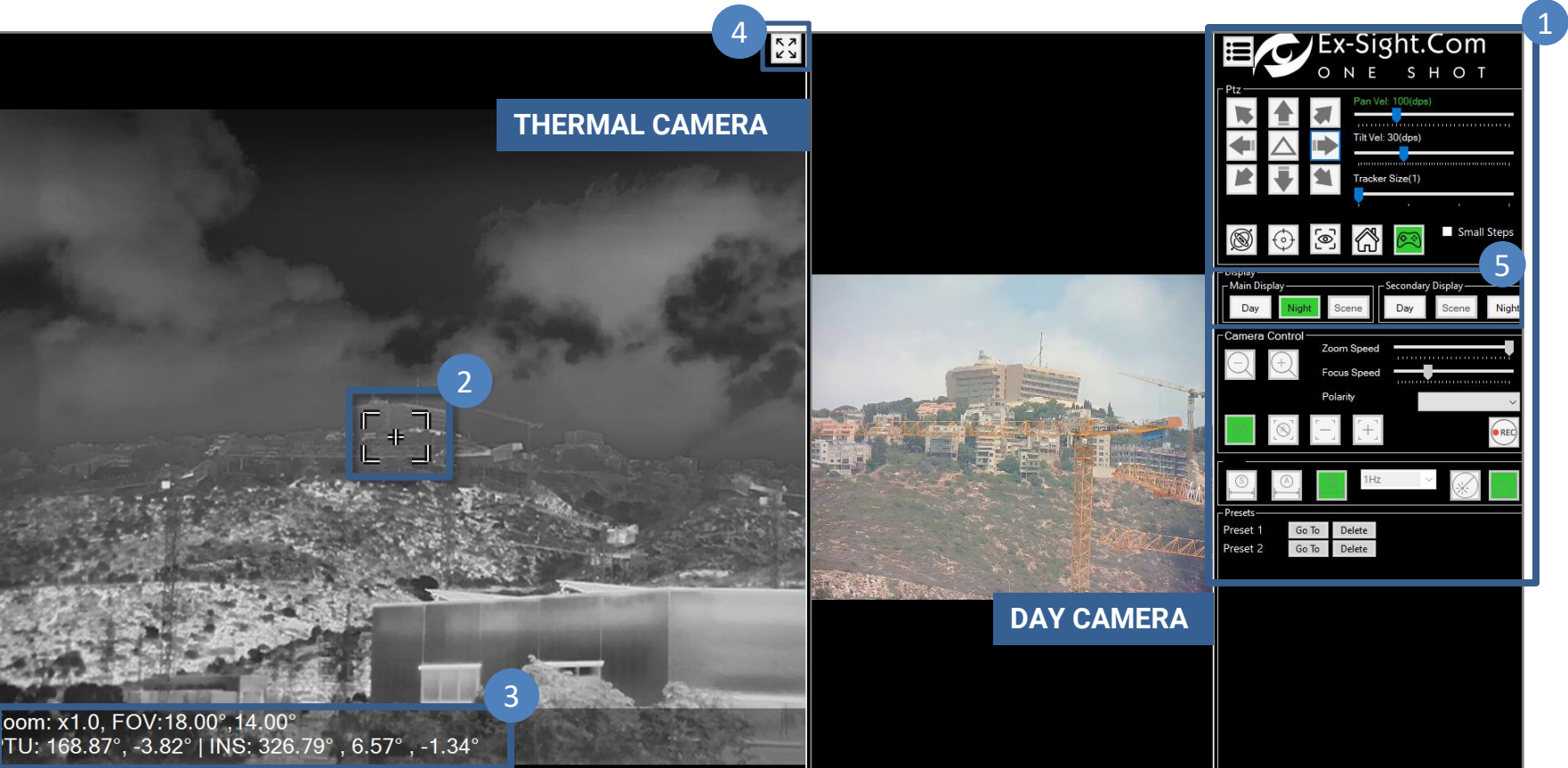
APPLICATION OPERATION

SIGHTDESK. TOOLBAR OVERVIEW

Appearance of Application SightDesk

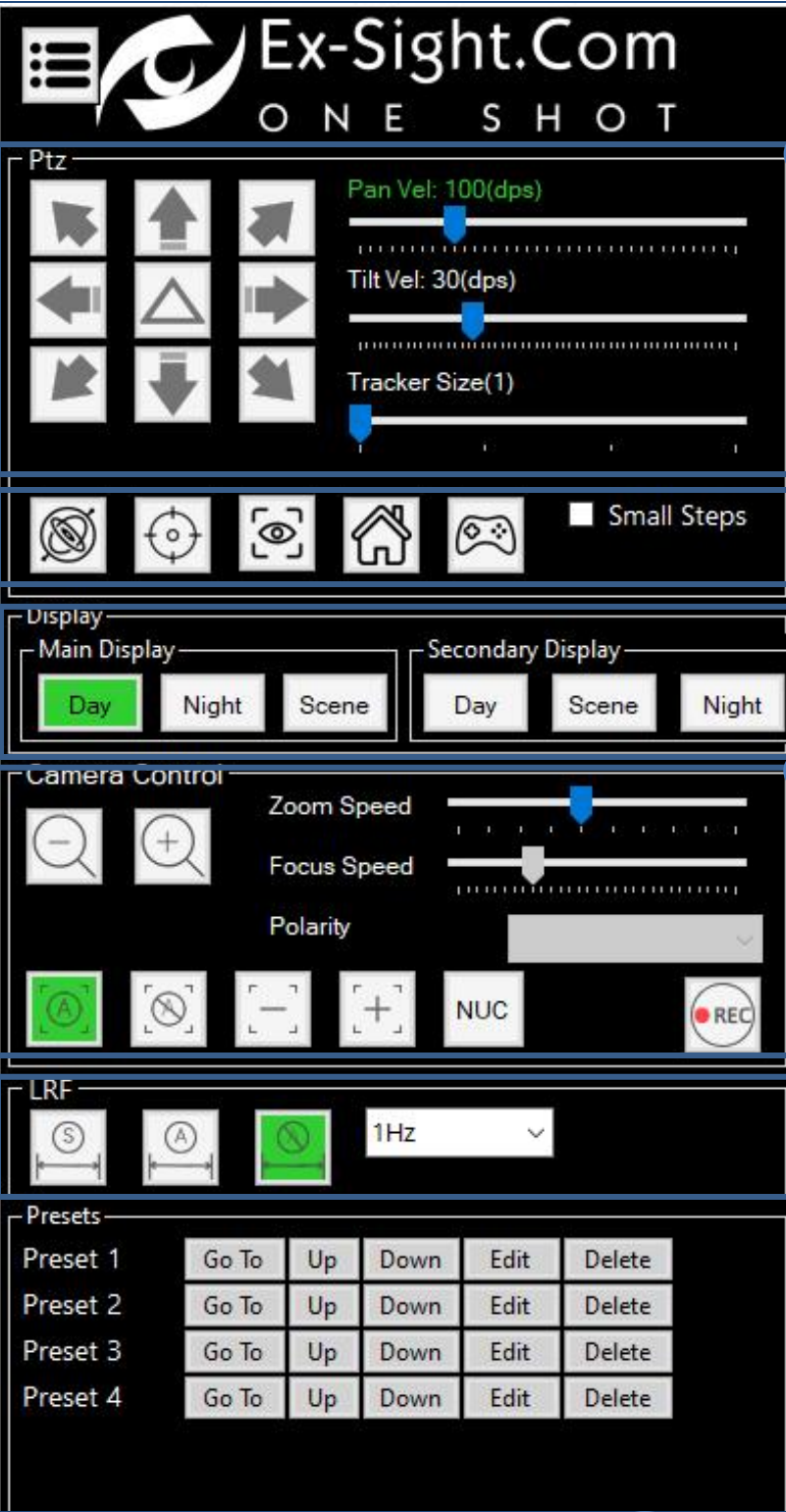


1	MAIN CONTROLLER	Software Control and Cameras Setting
2	FOCUS CURSOR	Viewfinder
3	SYSTEM DATA	Automatic information depending on the selected camera, PTU data, INS*
4	FULL SCREEN (Icon)	Opens the video to full screen. <i>The function is also executed on double-click</i>
5	DISPLAY MENU	Switch the camera view on the main screen <i>(or by clicking the mouse on selected screen)</i>



SIGHTDESK. TOOLBAR OVERVIEW

MAIN CONTROLLER: This menu allows the user to control the camera settings, including movement direction, zoom speed, object tracking, and joystick control mode. The function activation indicator is shown in **GREEN** on the button.



PTZ Control and Operations (1)

PAN and TILT movement control, turn speed settings and tracker cursor size

Main Functions (2)	
	Menu Setting (Burger) <i>Provides identify data, change settings, and improve overall operation.</i>
	Stabilization system PTU
	Automatic Tracking
	Object Detection <i>The screen shows a serial number, allowing the user to select a visible number for point tracking.</i>
	Home Position <i>The user sets a location point, and when they press the button, the camera will return to that location.</i>
	Joystick Control Mode <i>control of the system via joystick.</i>

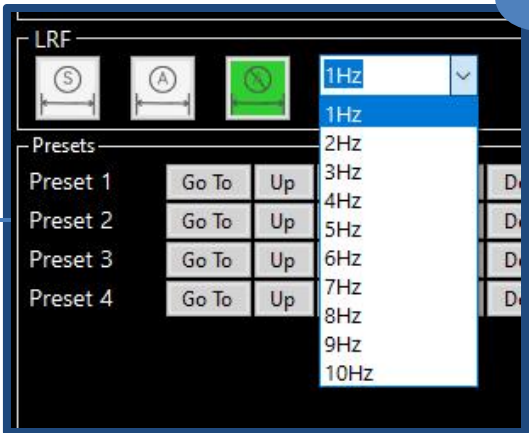
Display (3)

Switch screen type.

Camera Control (4)

Function control of Current camera: Zoom in/out, Zoom Speed, Polarity (optional), Auto Focus on/off, NUC, Record of stream.

LRF Control)OPTIONAL((5)	
Measurement method - one-time (single), automatic, measurement on/off. <i>Setting of measurement frequency. The frequency results are shown on the main screen.</i>	
LRF measurement interval (5a)	
Setting the automatic measurement speed LRF constant measurement interval	

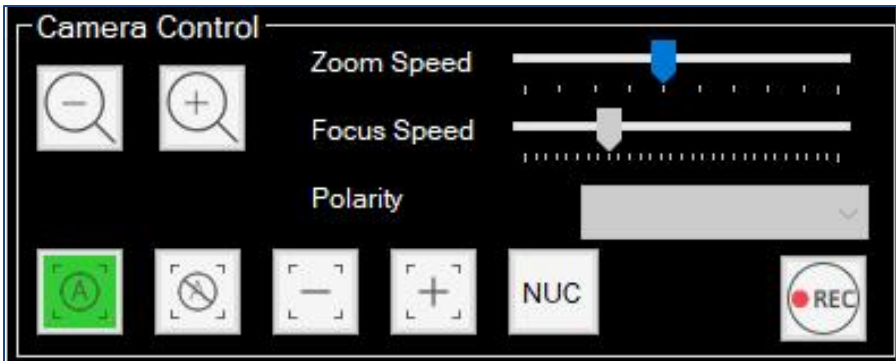


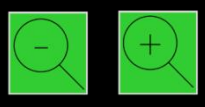
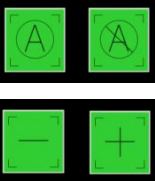
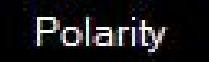
SIGHTDESK. TOOLBAR OVERVIEW



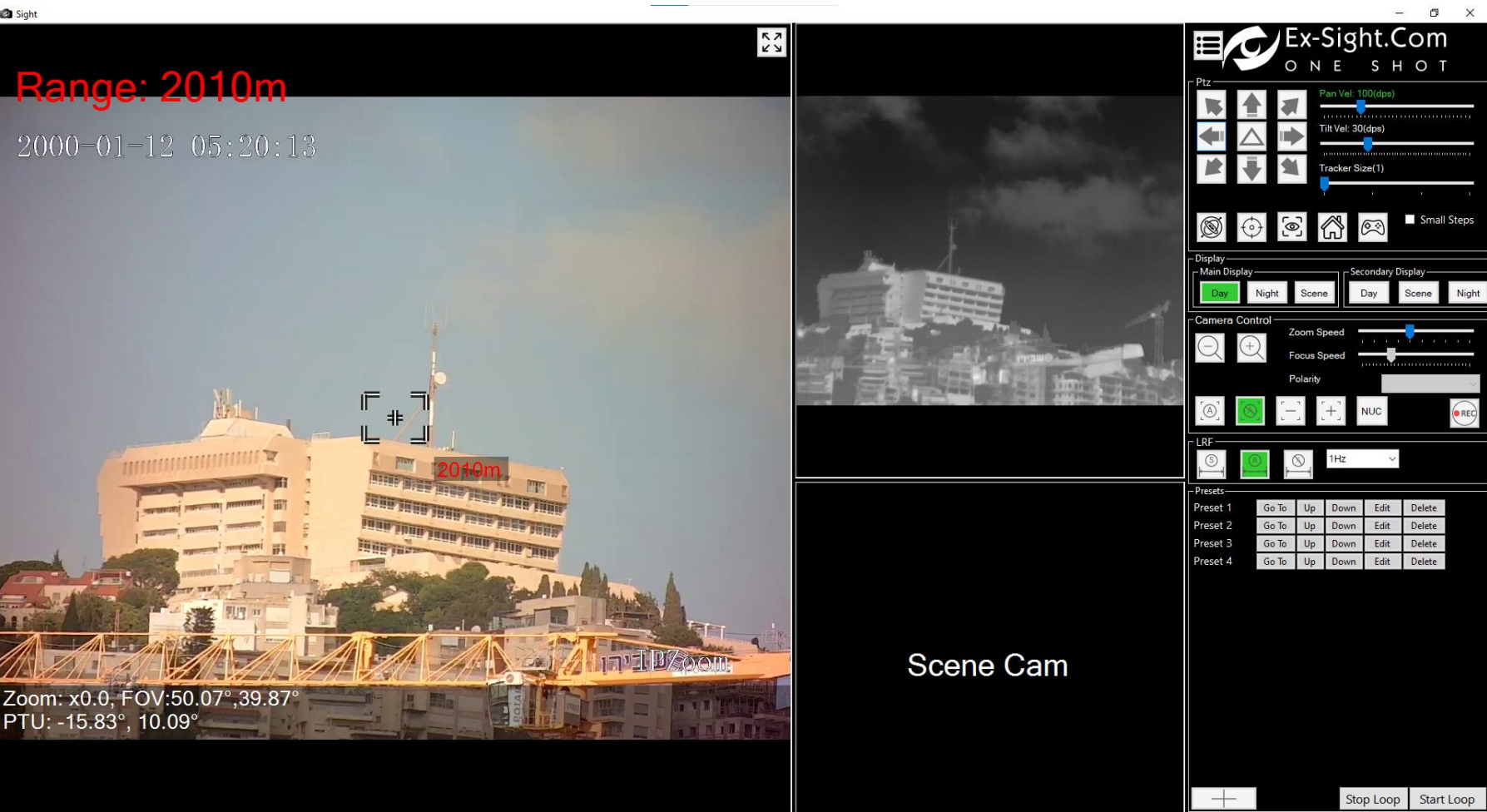
By default, the program displays video from the Day camera (large screen), which is accessed by pressing the **DAY** button in the **Main Display** section, the other cameras is also displayed on the side screen.

To switch between the cameras, double click on the image or select the desired camera type from the corresponding **MAIN DISPLAY** menu.



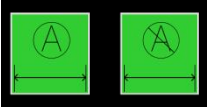
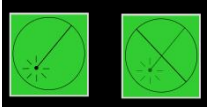
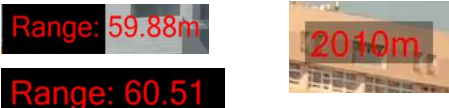
Camera Control Functions	
	Zoom Out/In
	Zoom speed for DAY Configurable Values (1 up to 7) Zoom speed for NIGHT Configurable Values (2 up to 32) Focus Speed for all types of cameras
	Autofocus Mode On/Off
	Manual Focus Settings Out/In
	Function for THERMAL Camera only. <i>Tones that are reversed from those in the original</i>
	Function for THERMAL Camera only <i>Performing a non-uniformity correction</i>
	Start/Stop Recording Camera Streaming <i>When the application records the video, the icon changes to: red and a strikethrough sign</i>

SIGHTDESK. TOOLBAR OVERVIEW

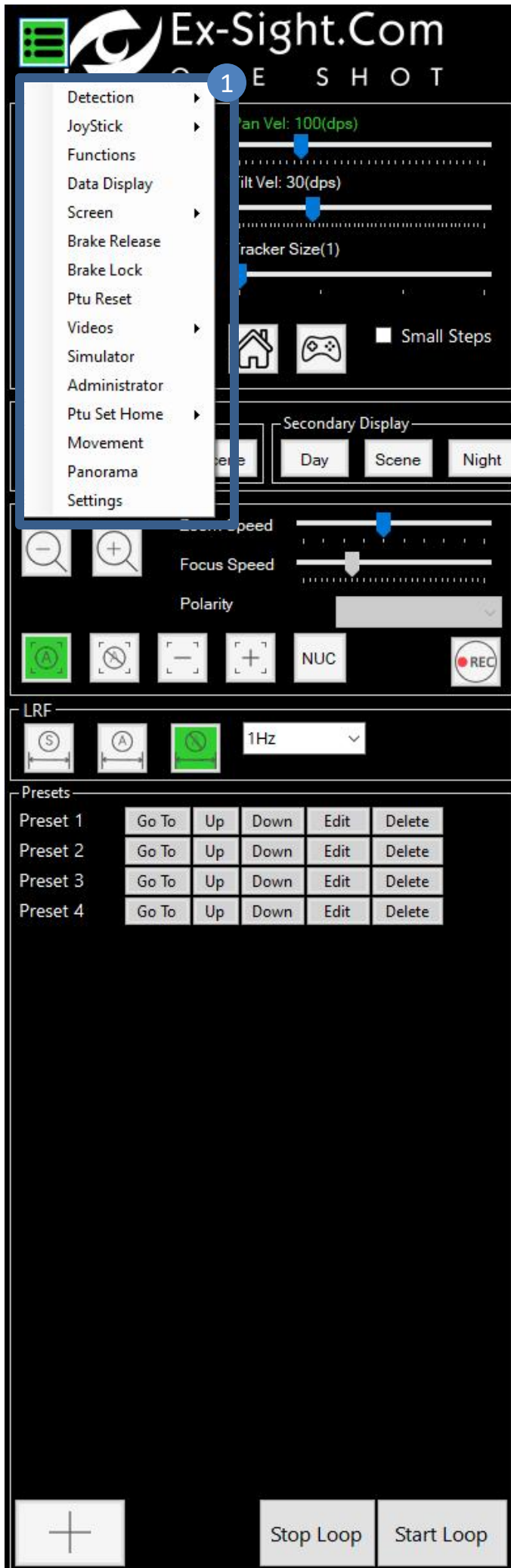


LRF measurement data is continuously displayed on the screen.
The user can use the **laser pointer** as needed in type of camera *with 30 km LRF*



Function and setting of LRF	
	Single Measurement Description on screen - Range
	Auto measurement On/Off Automatic measurement 1Hz/sec
	LRF constant measurement interval <i>Configurable Values</i> [1 Hz....4Hz...10Hz]
	Laser Pointer On/Off <i>*LRF 30Km only</i>
	Range Data constantly displayed on the screen

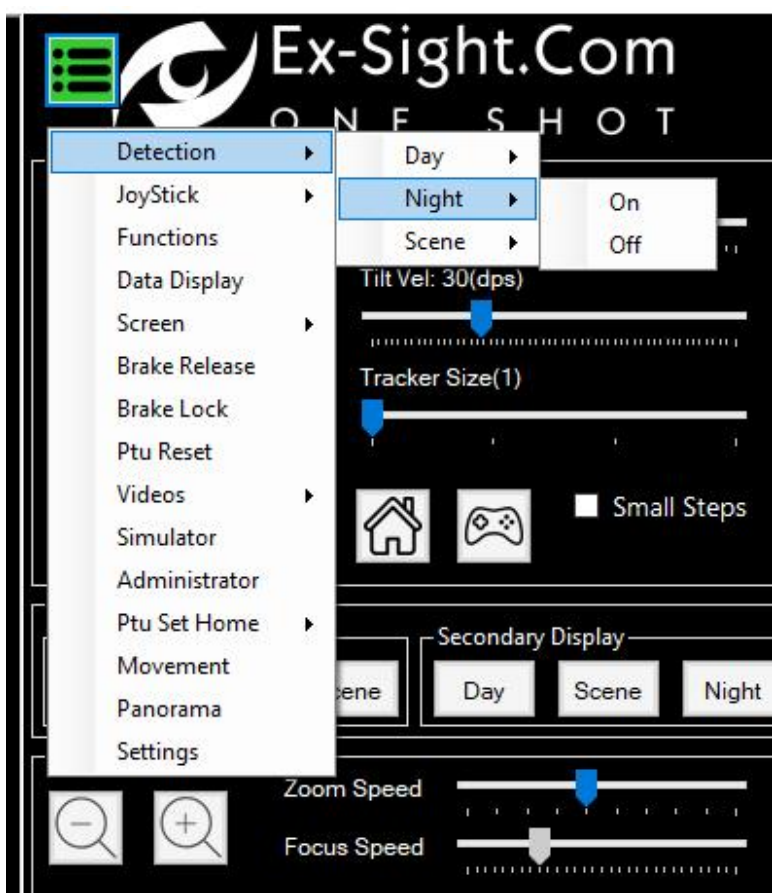
SIGHTDESK. TOOLBAR OVERVIEW



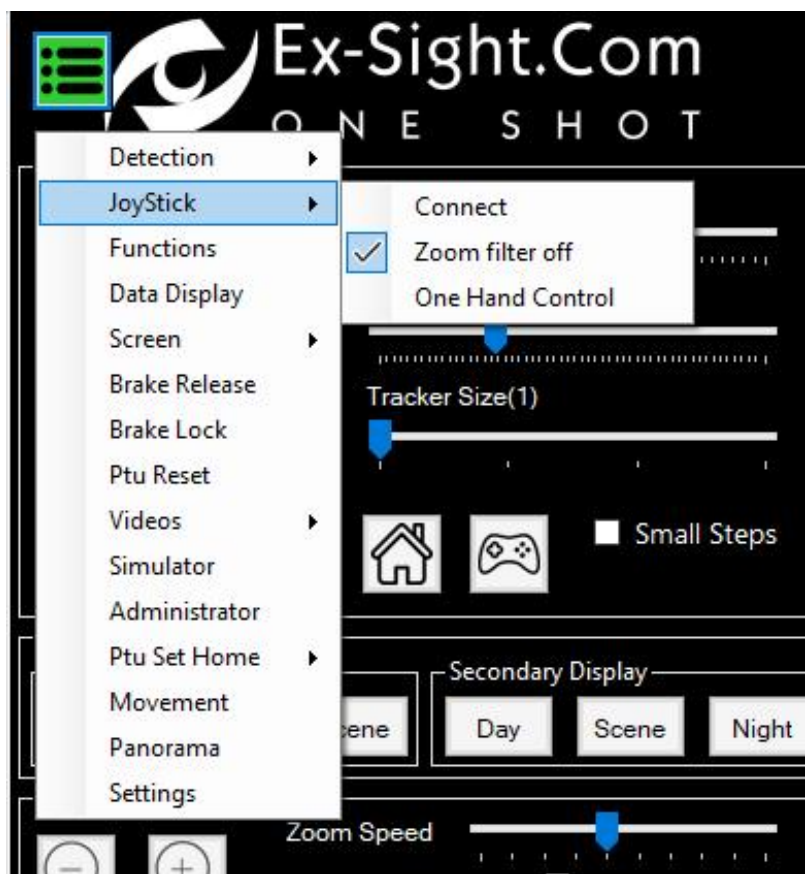
Main Menu Bar (Hamburger Menu Icon) - Software Control

For settings, the user selects a mode and tabs that allow you to adjust the operation of cameras.

SIGHTDESK. TOOLBAR OVERVIEW

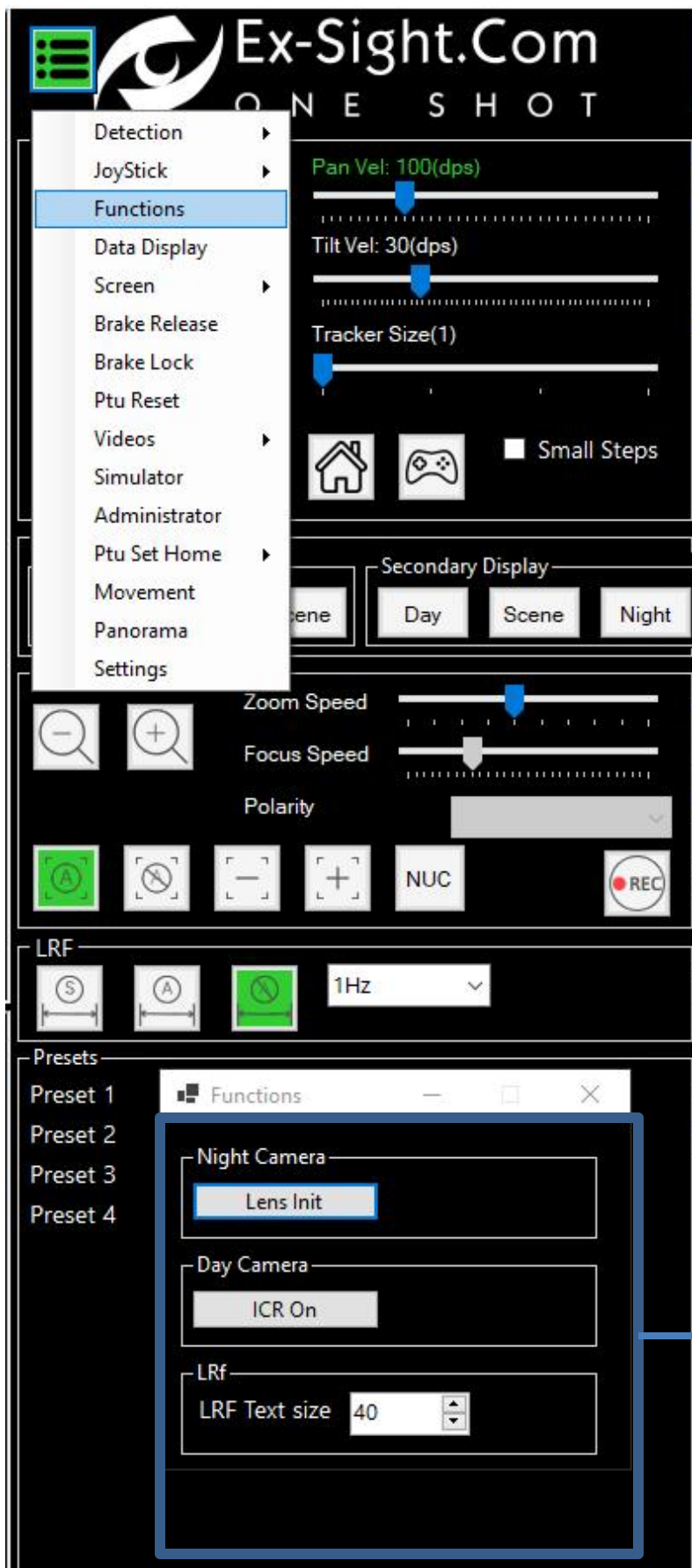


Detection	
Day-Night-Scene	ON/OFF by camera type - Day, Night, Scene

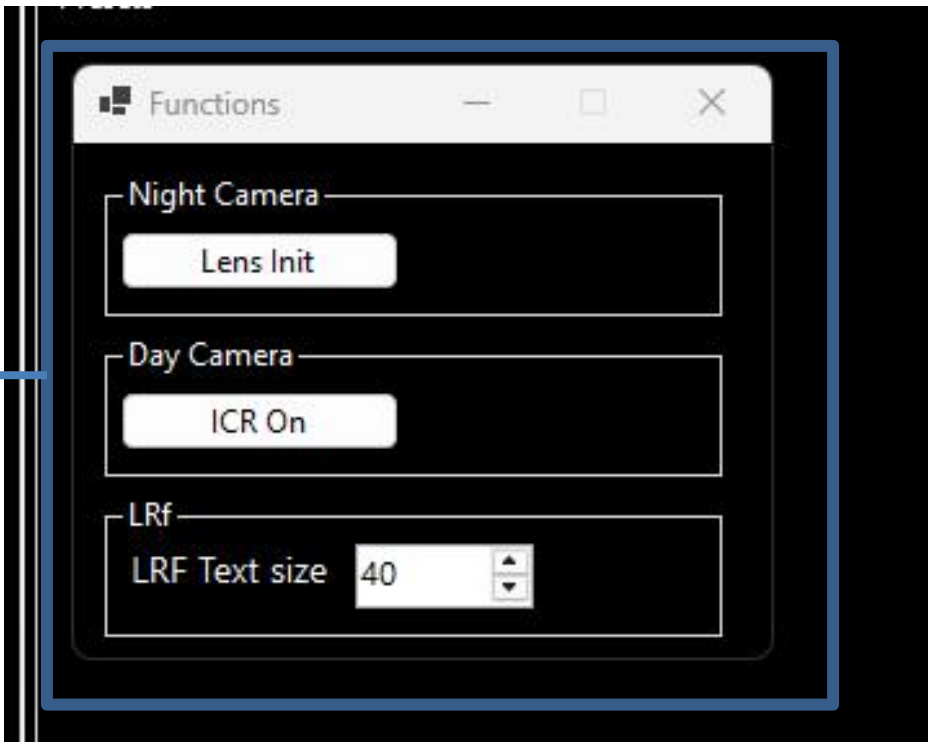


JoyStick	
Connect	On/Off device
Zoom filter On/OFF	Reduce PTU speed by Zoom
One Hand Control	Enable/Disable the mode

SIGHTDESK. TOOLBAR OVERVIEW



Functions	
Selecting the tab opens a separate window where you can adjust settings based on the camera type.	
Night Camera	NUC
Day Camera	Night Mode On/Off
LRF	Adjusting text size

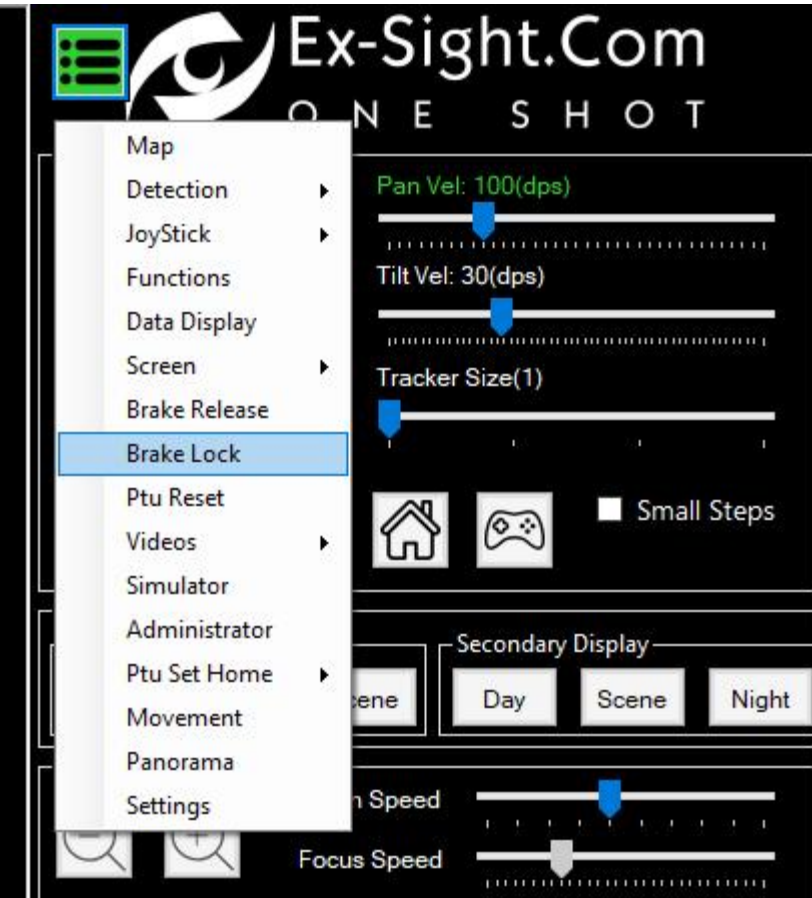
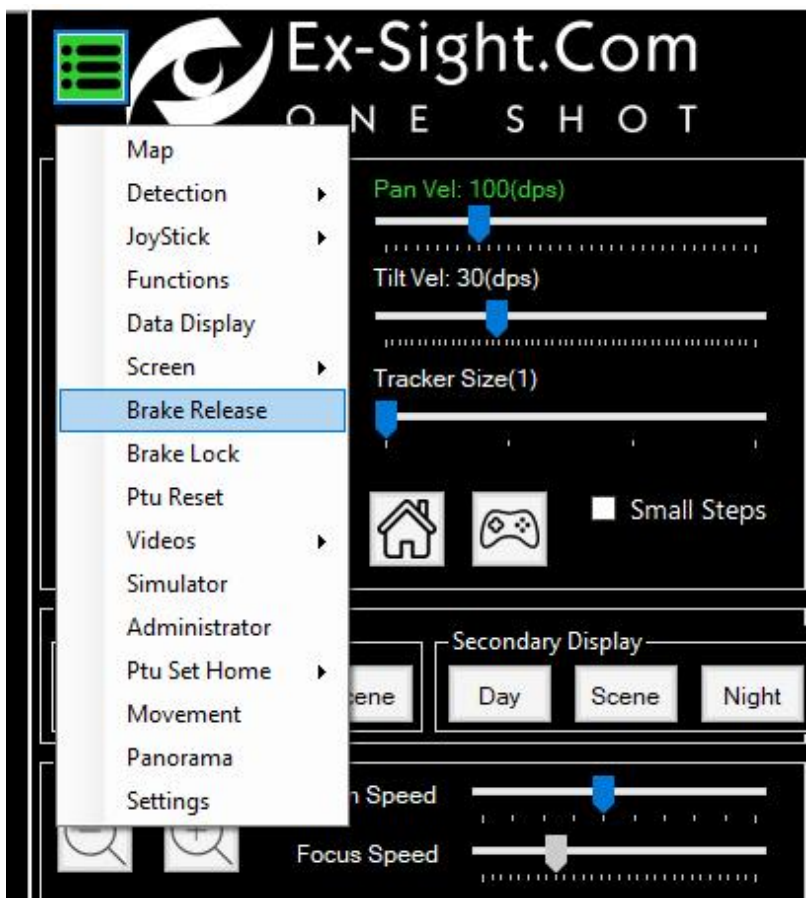


SIGHTDESK. TOOLBAR OVERVIEW

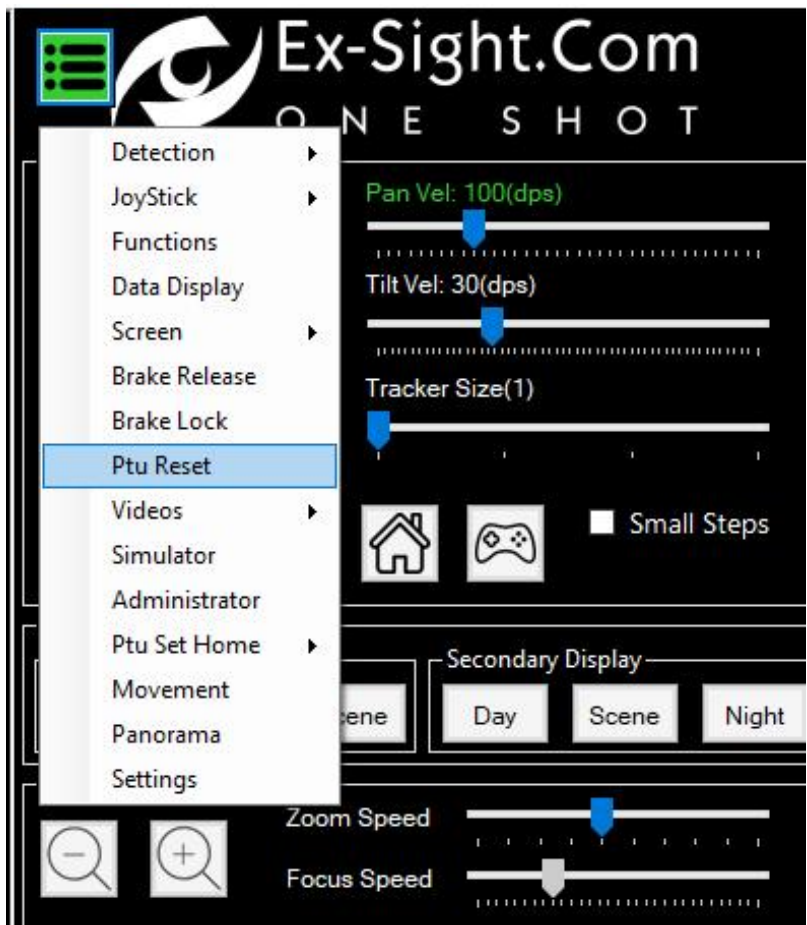


Data Display
<i>Separate Window</i>
Provides information about the current status of operating systems.

SIGHTDESK. TOOLBAR OVERVIEW

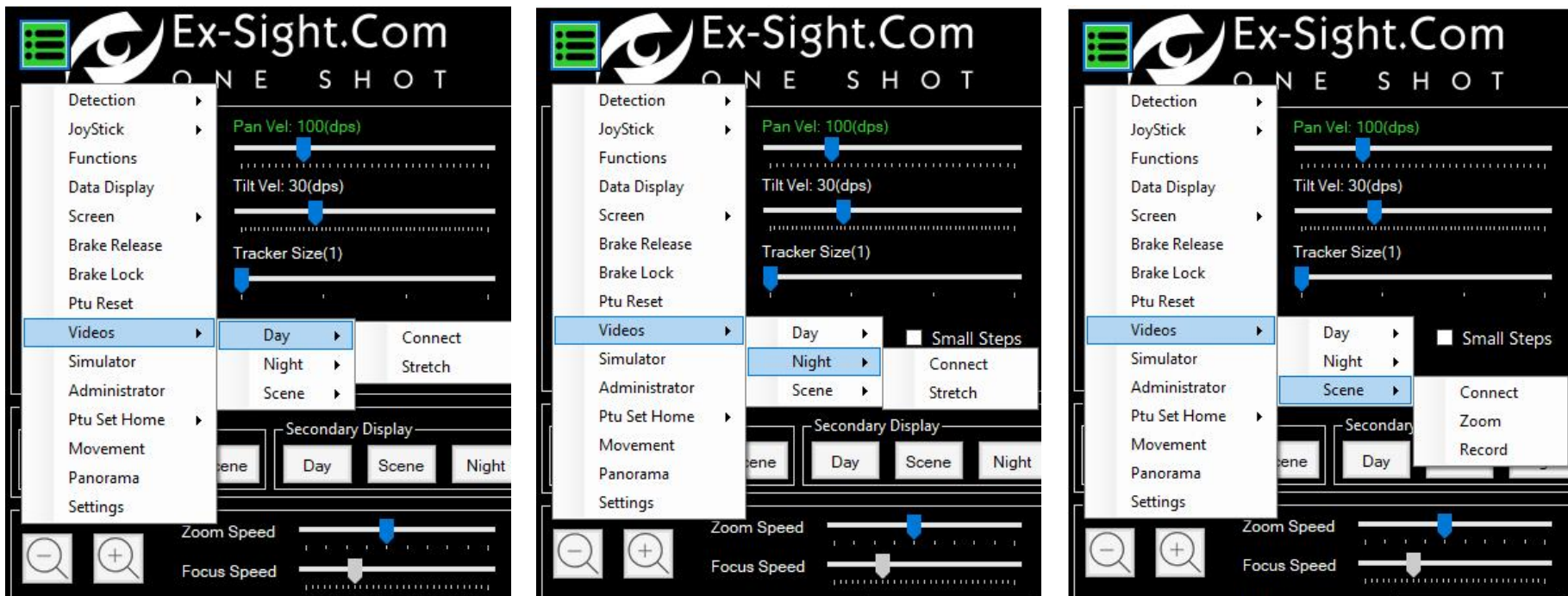


Brake Release	For 30 sec
Brake Lock	

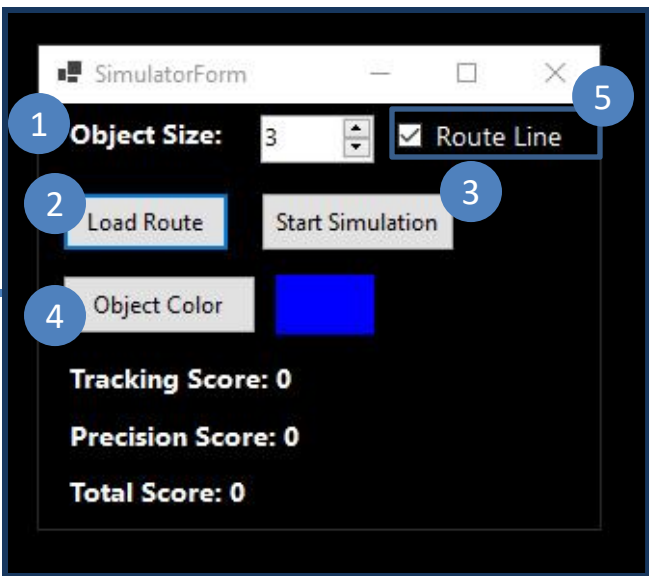
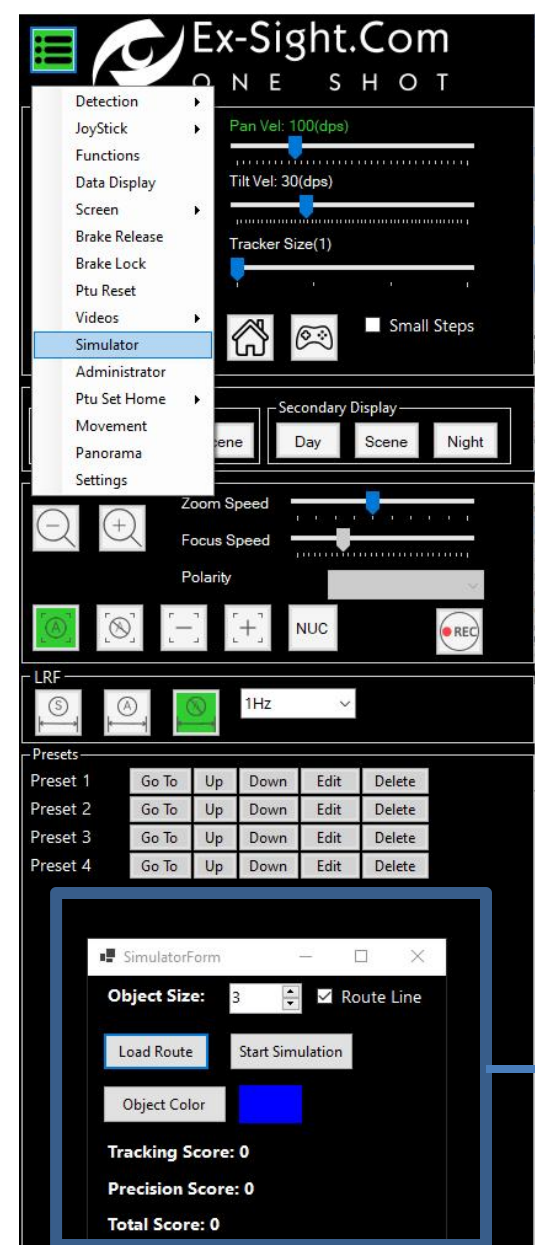


PTU Reset	
Set or Reset	Use when the user adjusts the operating settings of the PTU motors

SIGHTDESK. TOOLBAR OVERVIEW



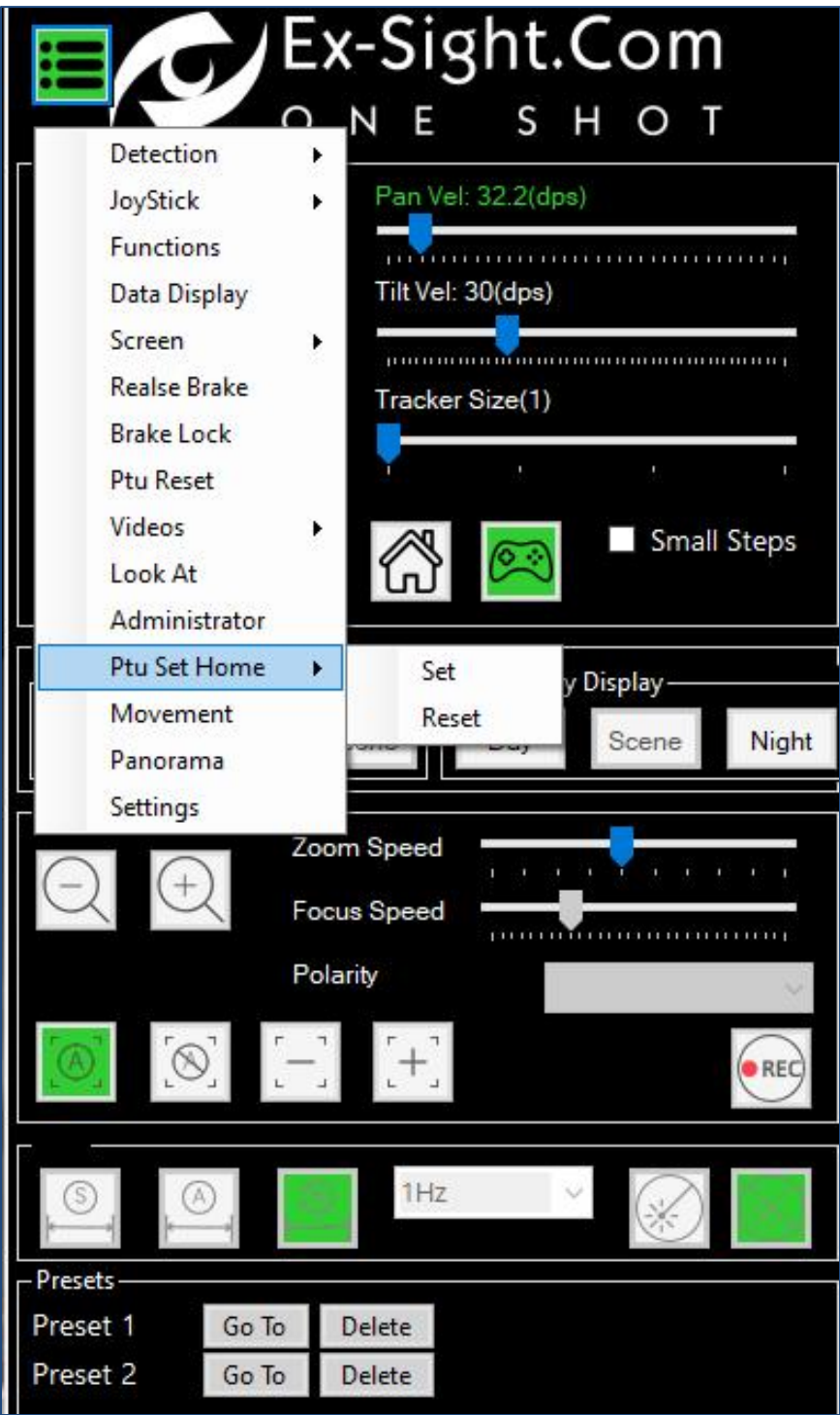
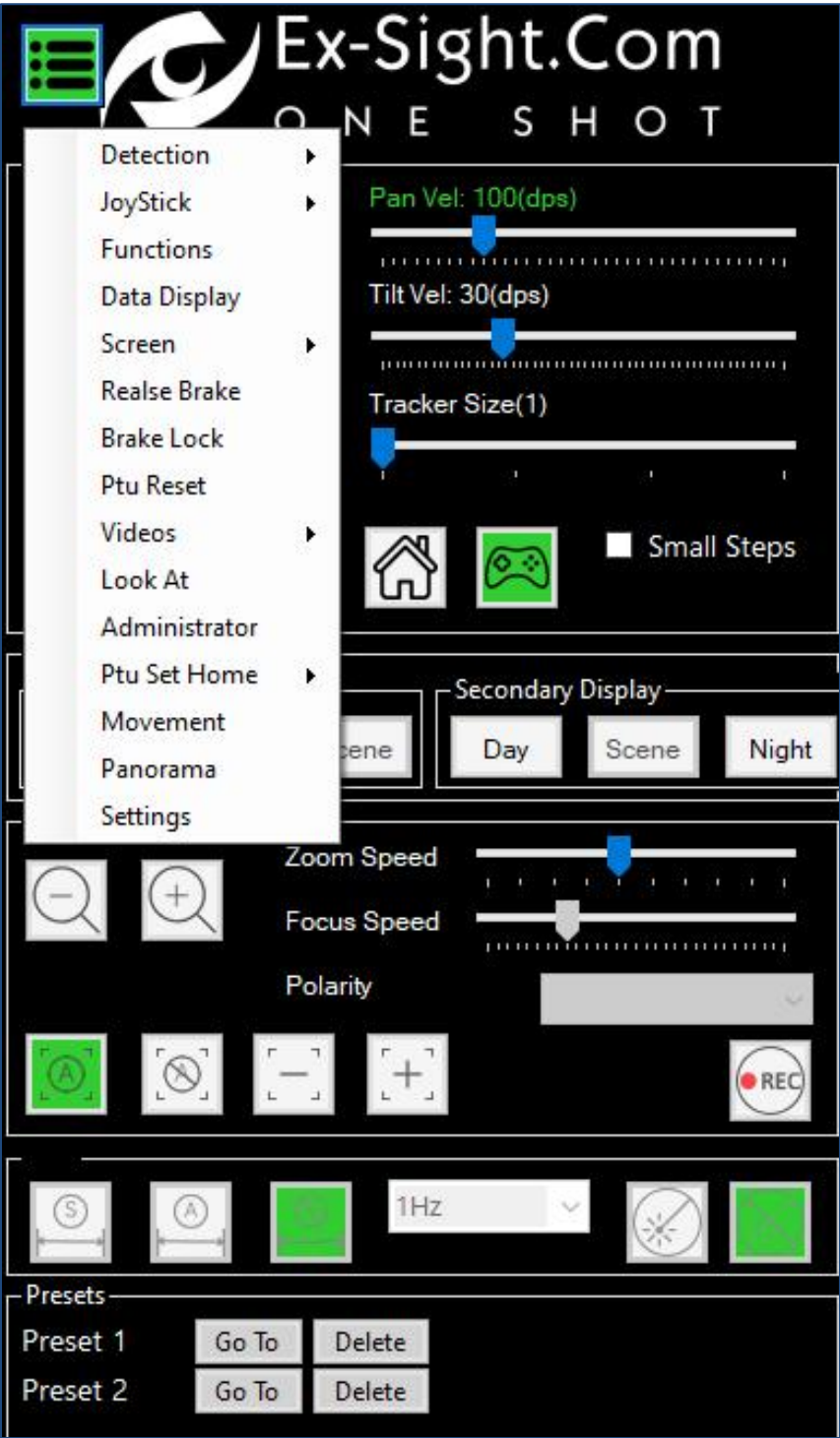
Videos	
Day/Night/Scene	Connect/Disconnect - Display Mode (Stretch/Zoom (Ratio))
Record	Enable ONLY in Scene Camera



Simulator (Function)		
1	Object Size	Configurable Values
2	Load Route	Loading a prepared motion trajectory file (road)
3	Start Simulation	System start
4	Choose Object Color	Menu for selecting the object color
5	Route Line	On/Off

SIGHTDESK. TOOLBAR OVERVIEW

Default position of HOME is 0,0 (Pan 0,Tilt 0)
To change the **Home Position Point**, the user opens setting menu (Burger) > **Ptu Set Home** > **Set**



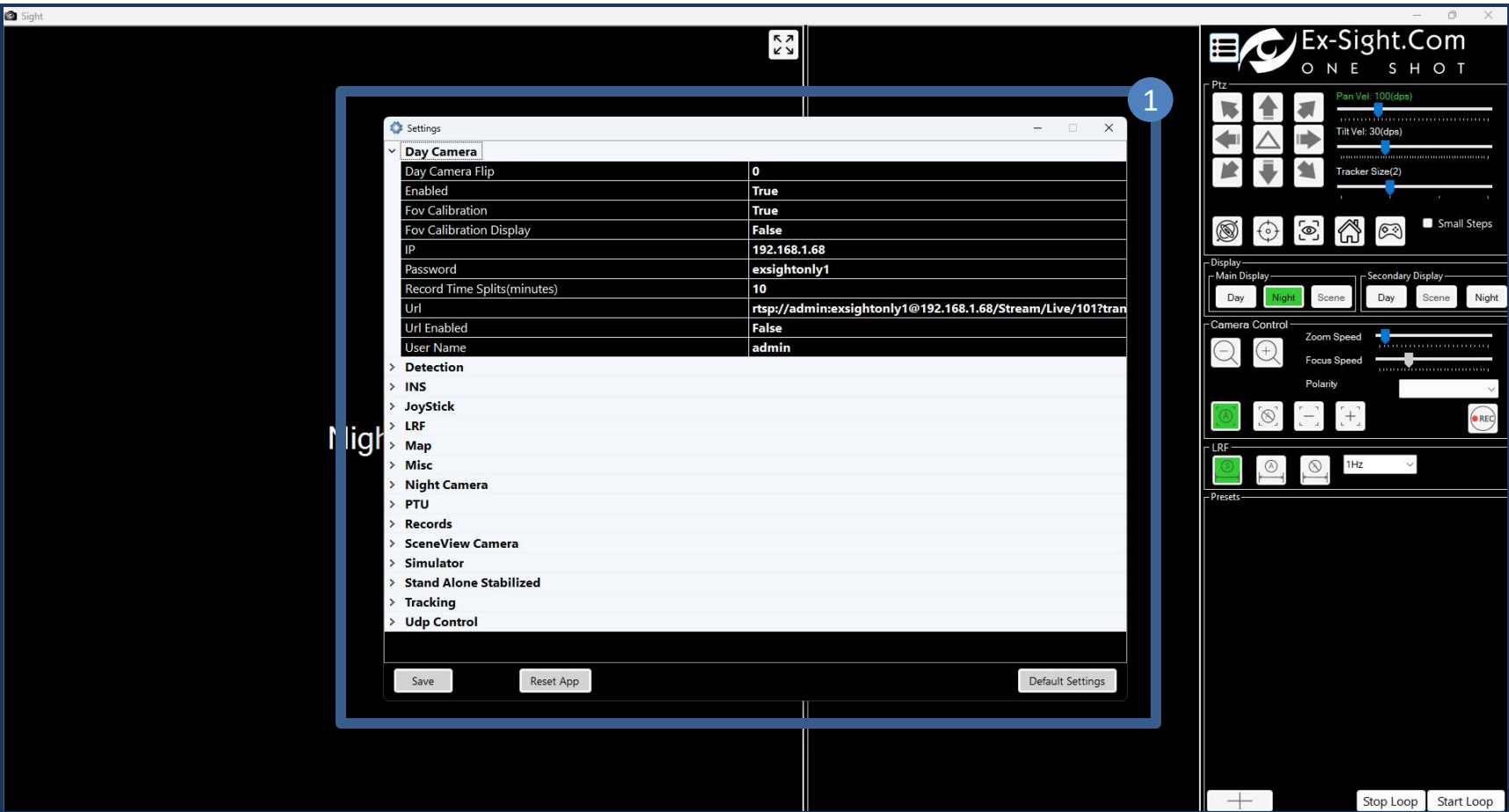
Also the user can control the camera's direction by clicking on the screen.

SIGHTDESK. TOOLBAR OVERVIEW

Settings - the table reflects the data received during streaming



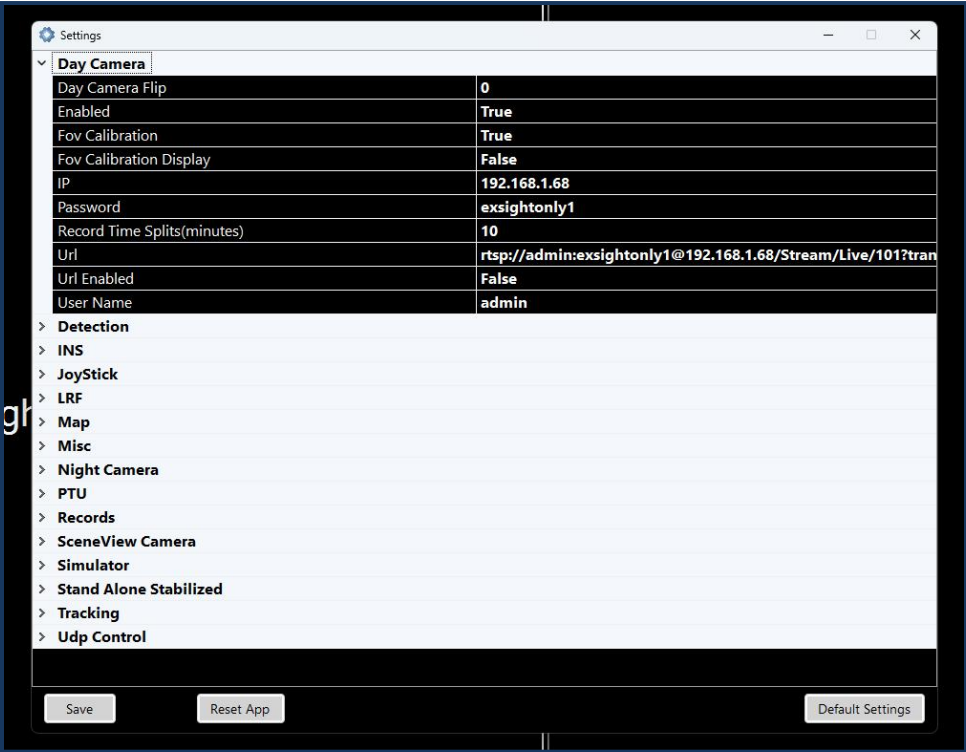
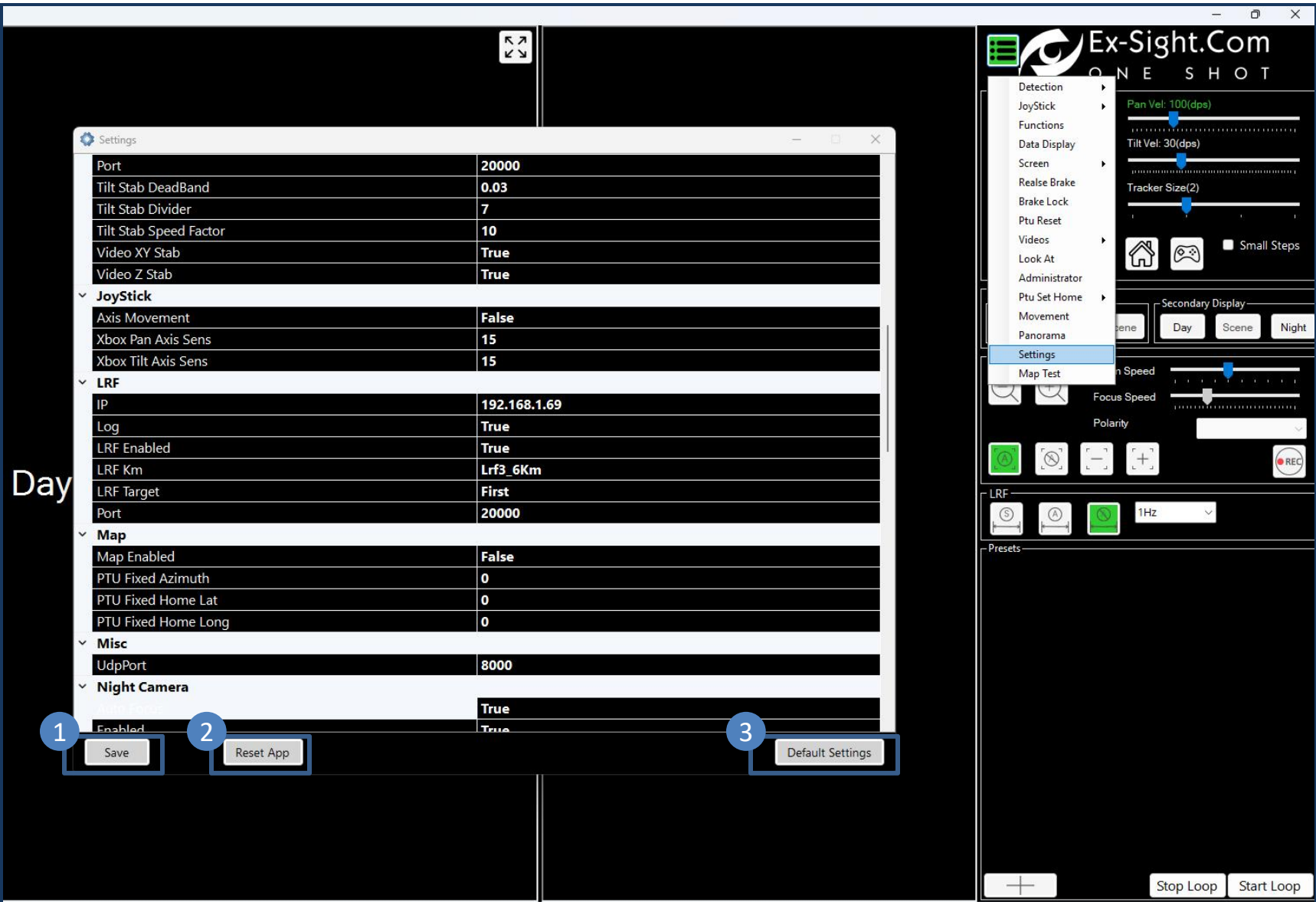
In the settings table (1), users can adjust their preferences by entering data or modifying the true/false selections.



SIGHTDESK. TOOLBAR OVERVIEW

To apply the changes, the user must select **Save>Reset app (1>2)**. The application will automatically update with the saved settings.

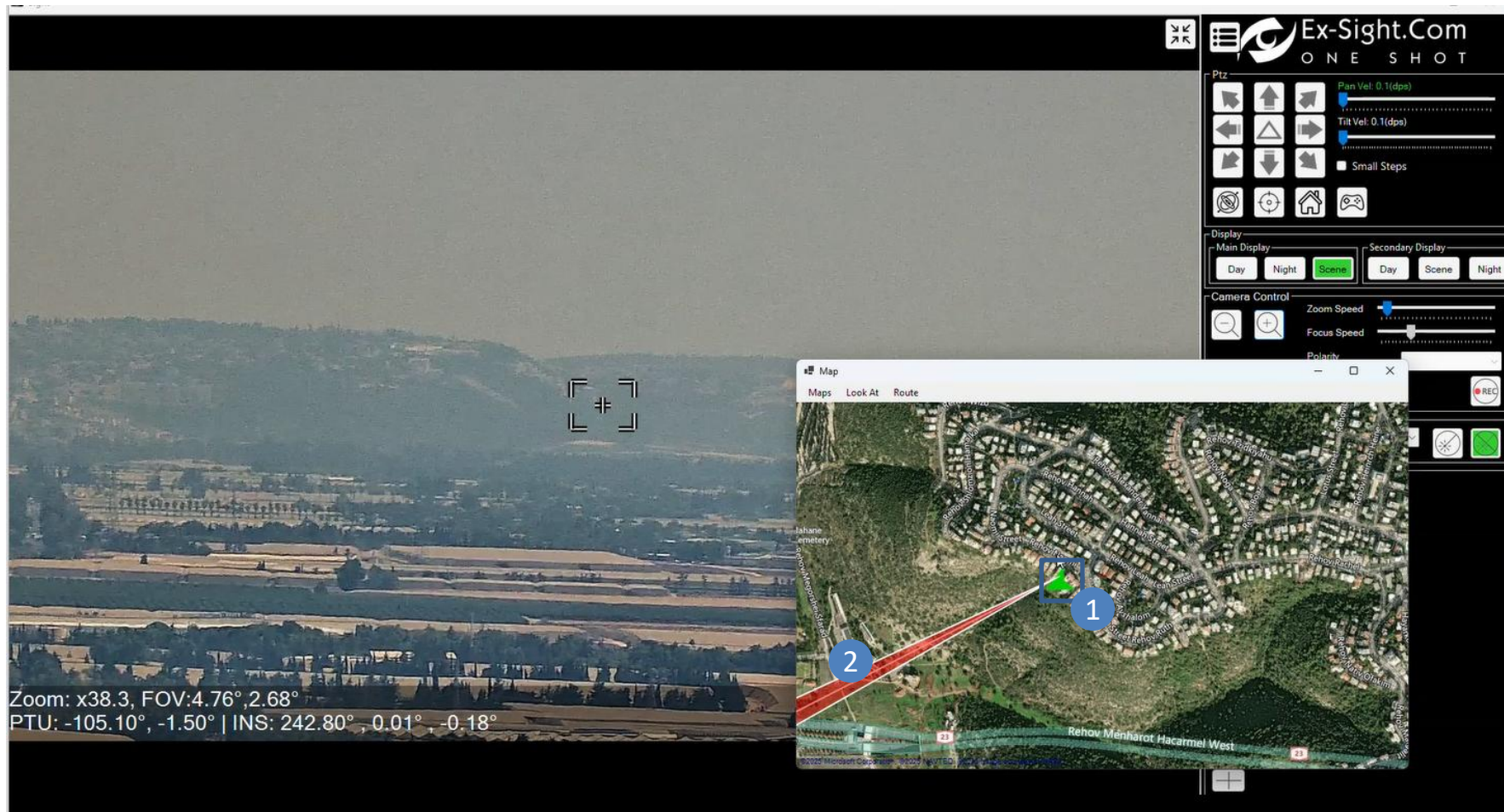
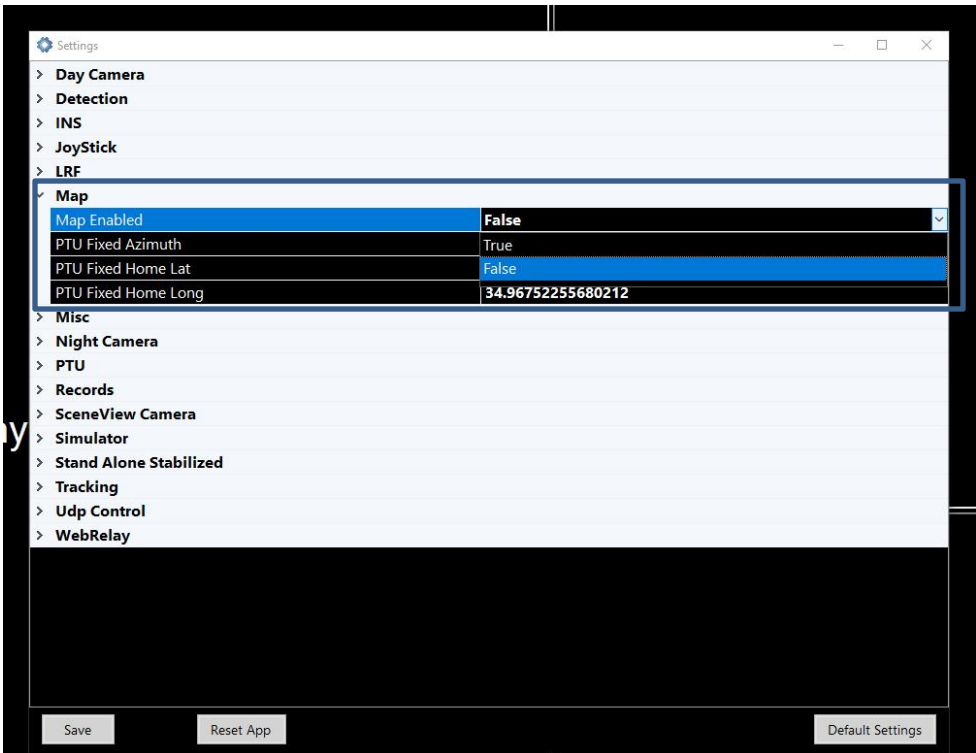
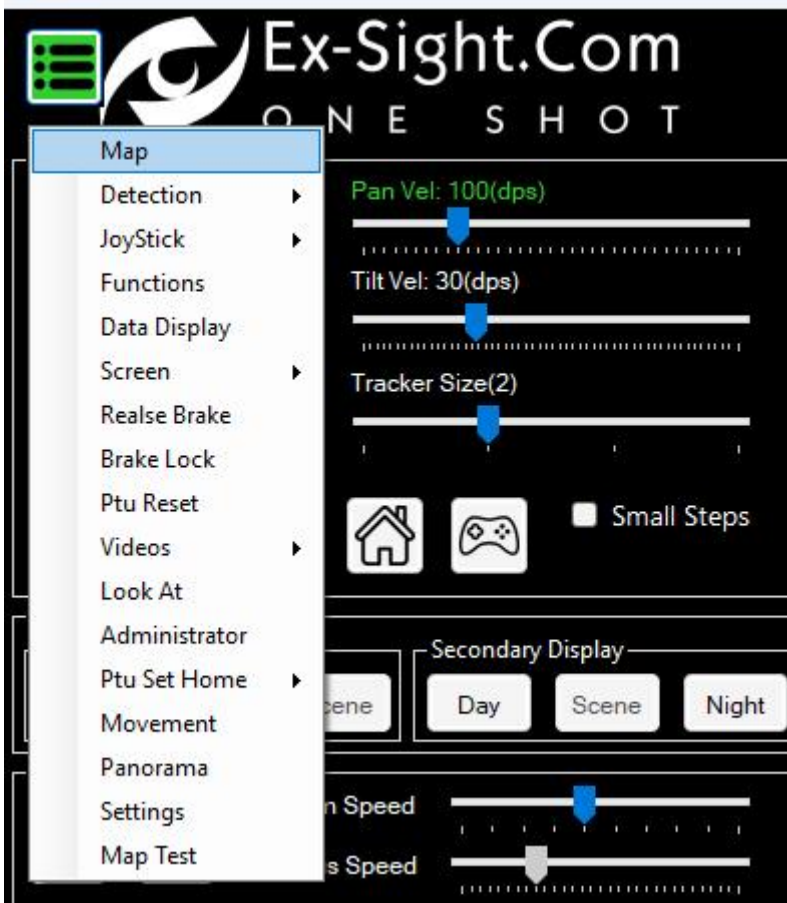
To restore the settings to their original configuration, select the **Default Settings (3)** option.



SIGHTDESK. TOOLBAR OVERVIEW

To add a **MAP** option to the **Main menu**, open **Settings > Map**, and change "False" to "True." This will enable the **MAP** option in the burger menu.

The Map will open in a separate window, displaying the system's (1) real-time location and Filed of view polygon (2).



Section 5

OZ640/1280 PRODUCT DATASHEET



OZ

Is the next generation powerful dual digital vision system with LRF for situational awareness packed in minimal package

Product Highlights

- 1600x1300@60fps Global Shutter x36 zoom Day Sensor
- 1280x1024 12 μ m 13mm 70 deg High Resolution LWIR Detector
- 3,500m NATO target Laser Range Finder
- Ethernet Interface, ONVIF support, embedded switch
- Hermetic IP-6, Nitrogen Purged, Military Grade
- CNC Aluminum Chassis
- 9-36VDC Power Stabilizer



UNCOOLED LWIR SYSTEM

THERMAL SENSOR

UNCOOLED LWIR 12 μm , RESOLUTION (PIXELS) 640x512/1280x1024, LENS (640) 5.8mm / (1280) 13mm, FOV 67° (69.4° x57.3°)/ 61° x50°, PITCH 12 μm , SPECTRAL BAND 8-14 μm / 7.5-13.5 μm , FRAME RATE 50 FPS, SENSITIVITY (NEDT) <50mK at F/1.0, GERMANIUM WINDOW

HD GLOBAL SHUTTER X36 DAY SENSOR

1/2.8" 2MP PROGRESSIVE SCAN GLOBAL SHUTTER CMOS, 1600X1300@60FPS/30FPS, H.265/H264 COMPRESSION, LENS F=4.5MM~162MM, OPTICAL ZOOM 36X, F1.5 (WIDE)~F4.0 (TELE), ICR, PRIVACY MASK FUCTION, HIGH LIGHT COMPENSATION, WDR/BLC/HLC/AGC/3D-DNR, ZOOM SPEED APPROXIMATELY 3.5S (OPTICAL LENS, WIDE TO TELE), COLOR:0.001 LUX @(F1.5,AGC ON); B/W:0.0005LUX @(F1.5,AGC ON), SHUTTER 1/25S TO 1/100,000S, ANGLE OF VIEW (D, H, V) 59.0° ~ 2.4° (WIDE~TELE), MOTION DETECTION / DEFOG FUNCTION, SUPPORTS VISCA, ONVIF, PELCO PROTOCOL, VIDEO OUT IP, SAPPHIRE WINDOW

INTERFACES

HERMETIC Type C: D38999/23YE35PN, ETHERNET/RTSP/ONVIF
VIDEO & CONTROL

PSU (POWER SUPPLY UNIT)

9-36VDC, Power Consumption in 12VDC = 8.8W

ENVIRONMENTAL

BLACK HARD ANODIZED ALUMINUM, STAINLESS STEEL N316 SCREWS, NITROGEN VALVE IN, SEALED OUTPUT SCREW , IP-67, NITROGEN PURGED, "O" RINGS

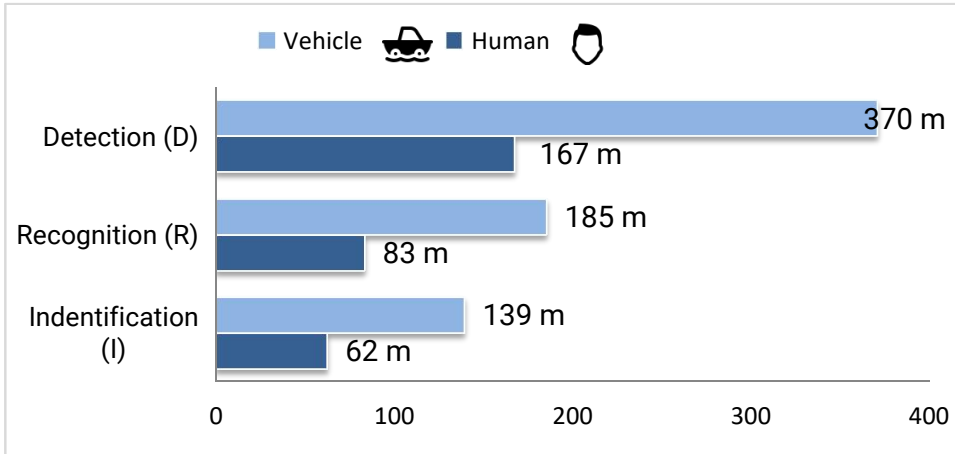
3.5KM LRF (LASER RANGE FINDER)

EYE SAFE CLASS 1, 3.5KM NATO TARGET 30% REFLECTANCE 8KM VISIBILITY, ACCURACY $\geq 98\%$, DIVERGENCE ANGLE 0.6MERD, ACCURACY $\pm 1\text{M}$, MINIMUM RANGE 15M, SAPPHIRE WINDOW

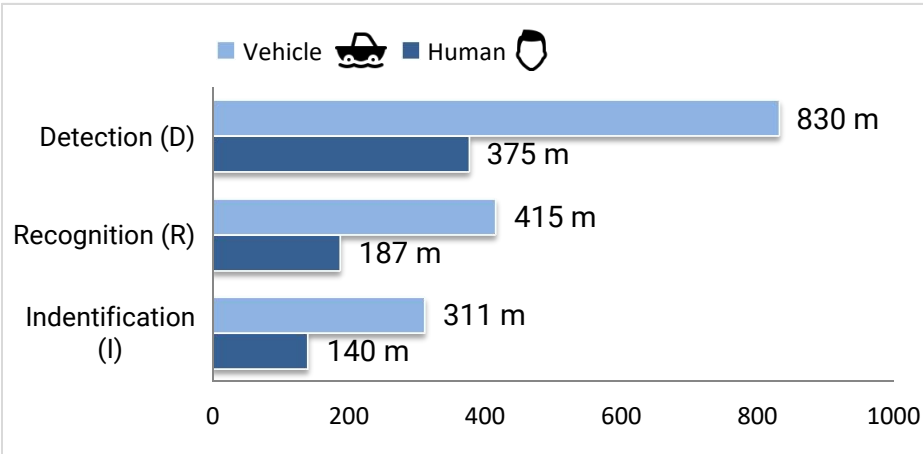
DIMENSIONS

(LxWxH, mm) 198x194x111mm, WEIGHT 5,000 gm

OZ640 DRI LWIR (m)



OZ1280 DRI LWIR (m)



Calculation according to Johnson Criteria

DIMENSIONS (mm)

OZ PART NUMBERING:

OZ-[RES]-[ZOOM-DS]-[LRF]

[RES] LWIR RESOLUTION

640 (LWIR 640x512 , 5.8mm)

1280 (LWIR 1280x1024 , 13mm)

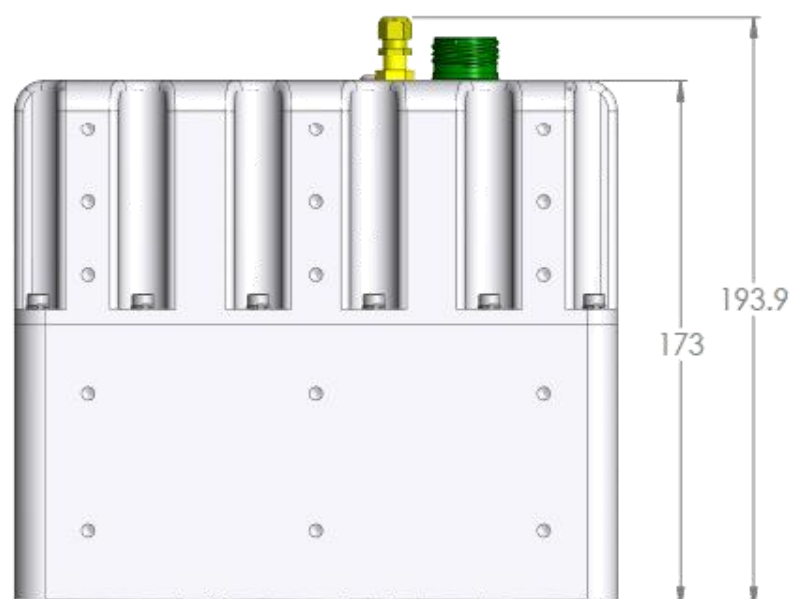
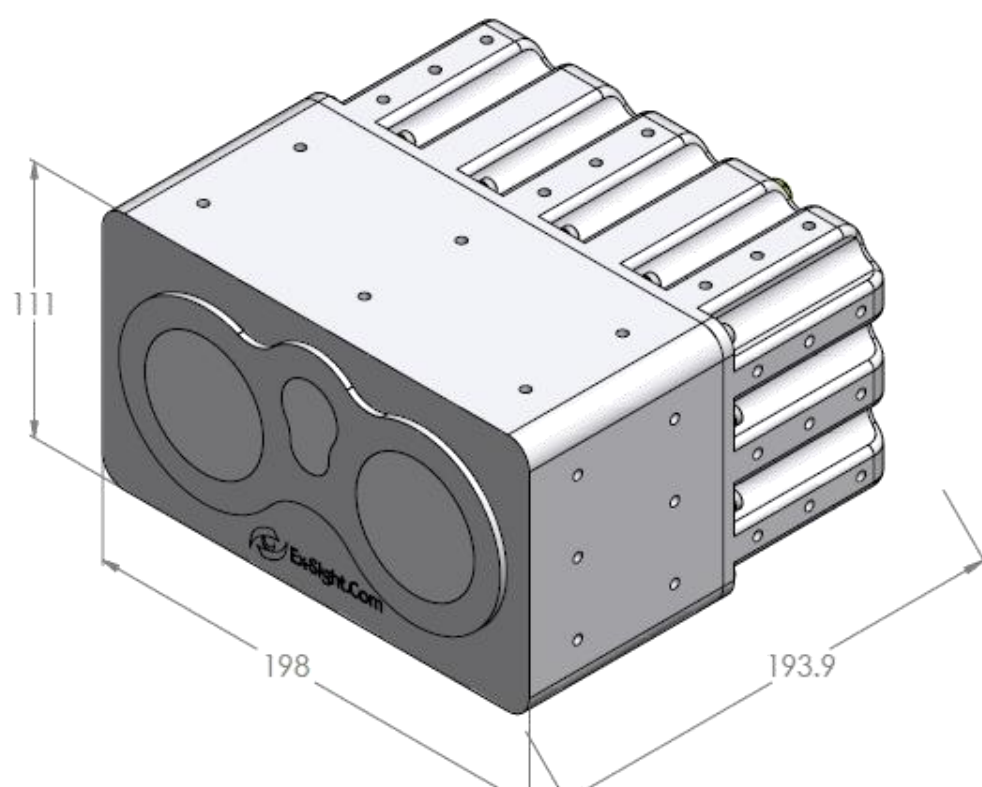
[ZOOM-DS] ZOOM DAY SENSOR

36GS x36 Optical Zoom Global Shutter

[LRF] LRF

Blank - No LRF

LRF – 3.5 Km NATO target LRF



PRODUCT PIN LAYOUT

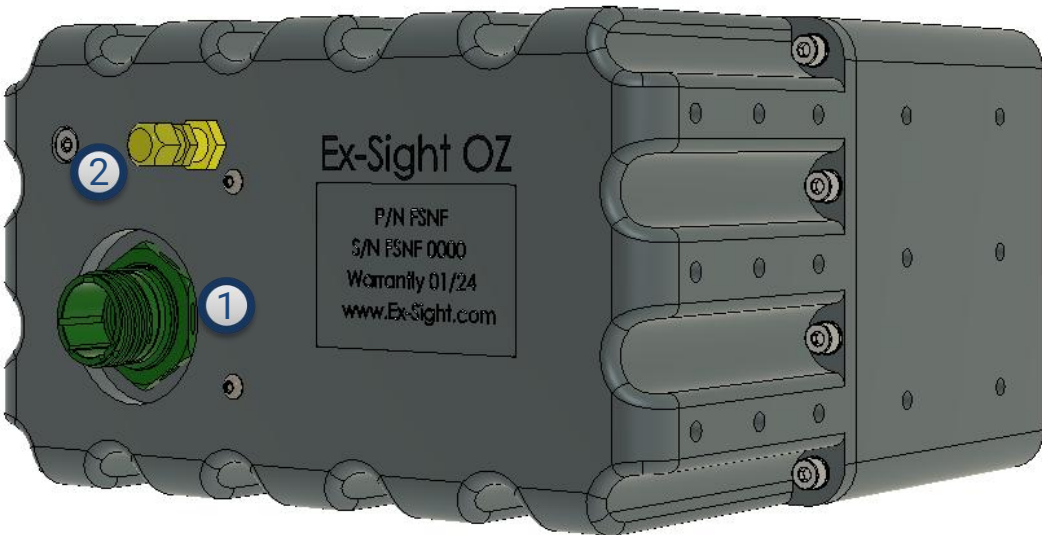
PANEL PIN LAYOUT
D38999/23YC35PN
Stainless Steel Hermetic Connector



PART Numbering Index

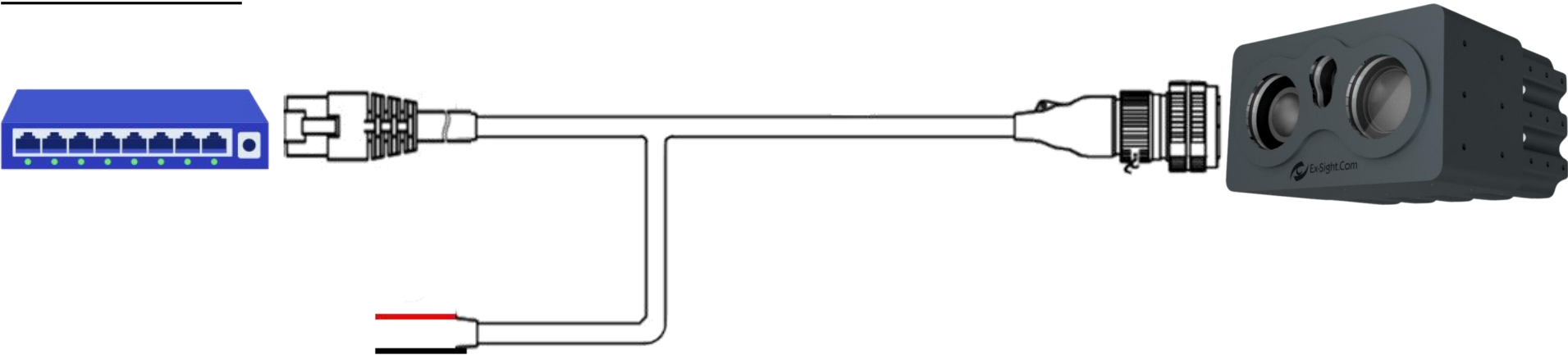
PIN#	DESCRIPTION
1	NC
2	NC
3	(+9 TO +36VDC) INPUT POWER
4	GND INPUT POWER
5	(+9 TO +36VDC) INPUT POWER
6	GND INPUT POWER
7	NC
8	NC
9	ETHERNET2 (1) TX+
10	ETHERNET2 (2) TX-
11	ETHERNET2 (3) RX+
12	ETHERNET2 (6) RX-
13	NC
14	NC
15	ETHERNET1 (1) TX+
16	ETHERNET1 (2) TX-
17	ETHERNET1 (3) RX+
18	ETHERNET1 (6) RX-
19	DAY VIDEO CVBS SIGNAL
20	DAY VIDEO CVBS GND
21	THERMAL VIDEO CVBS SIGNAL
22	THERMAL VIDEO CVBS GND

#	P/N	DESCRIPTION
1	D38999/23YC35PN	Mil. Std Stainless Steel connector
2	MS51377-2 MS51607-1 MS20813-1	Nitrogen Valve Core Nitrogen MS Valves Nitrogen Fitting

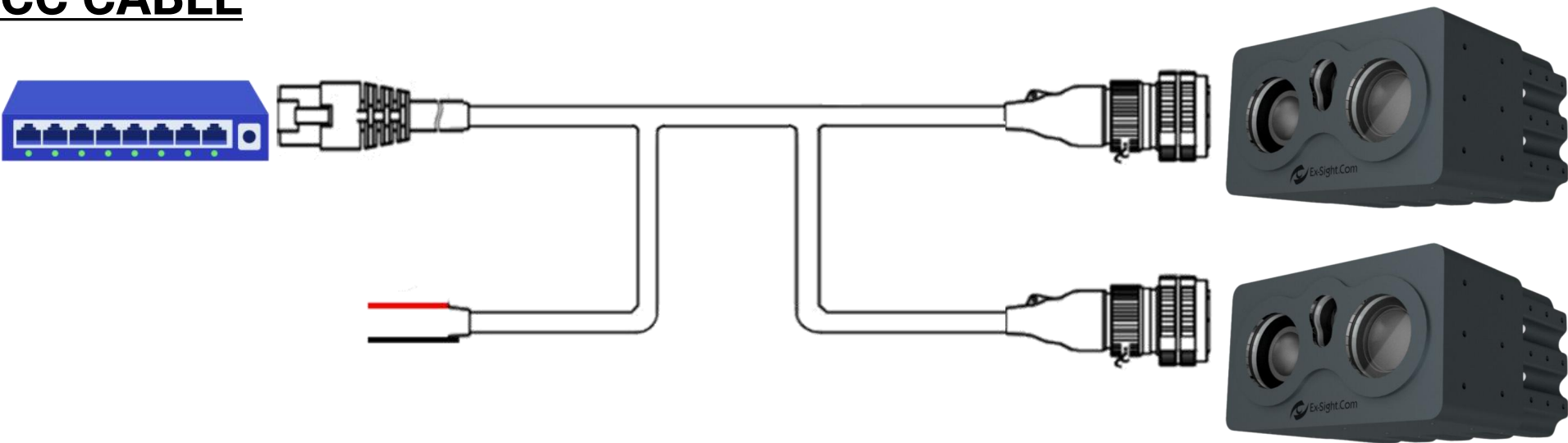


CABLE PART NUMBERING

SC CABLE



CC CABLE



CABLE PART NUMBERING:

OZ-CABLE-[CT]-[LEN1]-[LEN2]

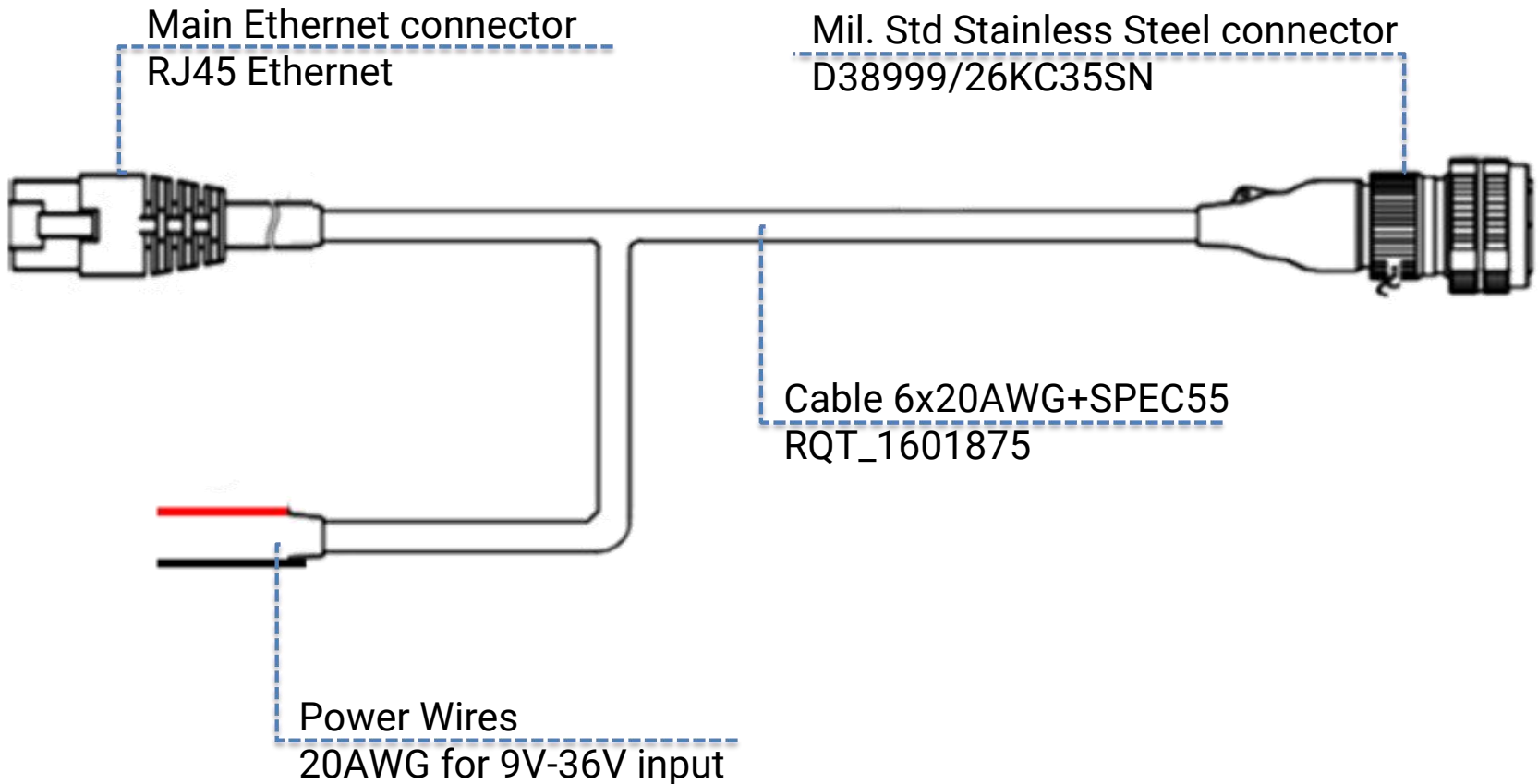
[CT] CABLE TYPE:

- SC (SINGLE CABLE)
- CC (CHAINED CABLE)

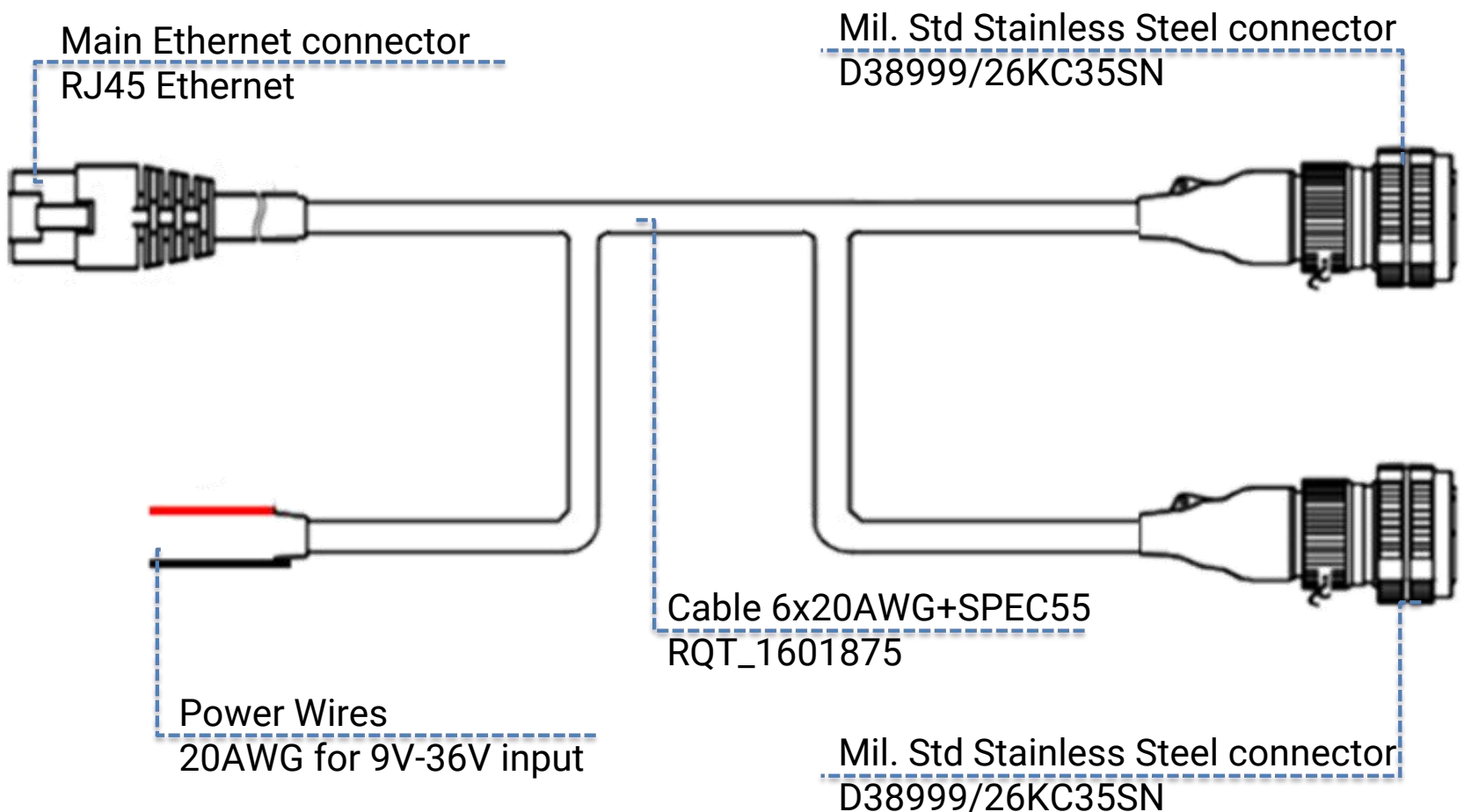
[LEN1] CABLE LENGTH in Meters

[LEN2] CHAINED CABLE LENGTH in Meters (CC cable only)

SC CABLE MAIN PARTS)Single Cable(



SS CABLE MAIN PARTS (Chain Cable(



RQT1601875 CABLE

CABLE SPECIFICATION

22 Conductor Cable

Components:

Cat. 5e Cable:

Conductor: 24 AWG 7/32 Tinned Copper.

Insulation: XLPE, OD 1.3mm.

Color Code: Blue X White, Orange X White, Green X White, Brown X White.

Shield: Aluminum foil + Tinned cooper braid 80% Min coverage.

Jacket: PTX, OD 7.6 mm, Black, Numbered 1-2.

20 AWG pairs:

Conductor: 20 AWG 19/32 Tinned Copper.

Insulation: ETFE, OD 1.4 mm.

Color Code: Black, Red.

Cable:

Two (2) Cat. 5e 4X2X24 AWG SF/UTP.

Three (3) 20 AWG unshielded twisted pairs.

Jacket:

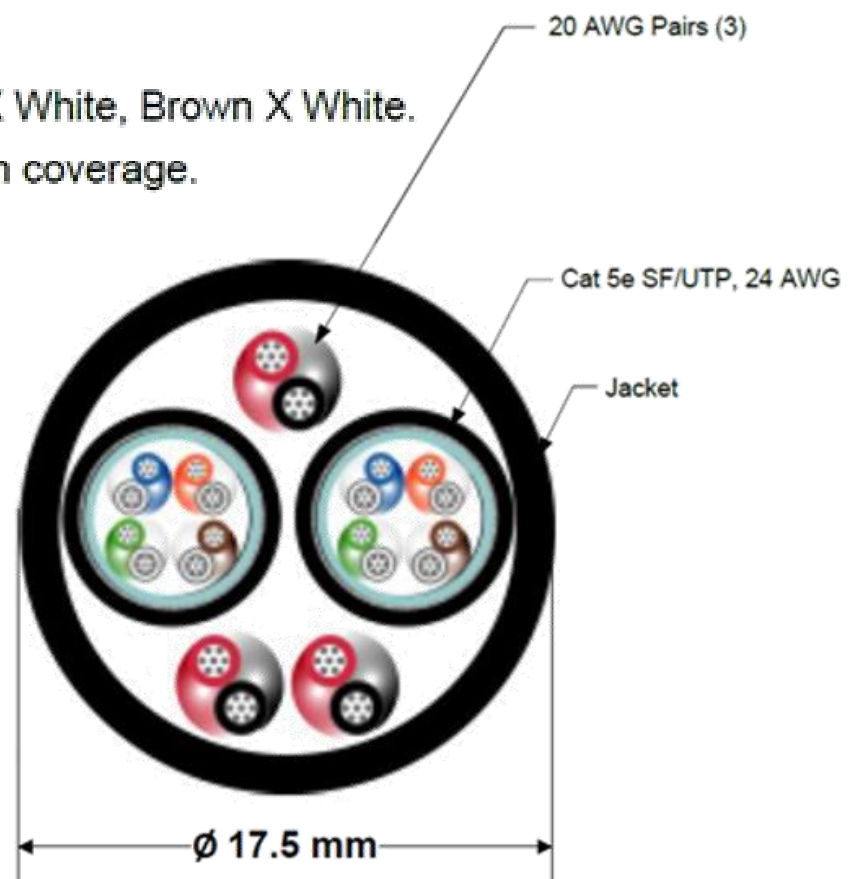
Halogen-free, flame retardant, Cross Linked Thermoplastic Elastomer.
to 17.5 mm nom – Black

Marking:

Jacket marked 'RQT1601875 – Week & Year of Manufacture' at 1000mm intervals.

Performance:

Min. Bend Radius:	180 rmm
Min. Band Radius for Operation:	150°mm
Max. Operation Temperature:	+90 C
Min. Operation Temperature:	- 40 C
UV Resistance:	Yes
Weight:	260 Kg/Km



MECHANICAL DRAWING

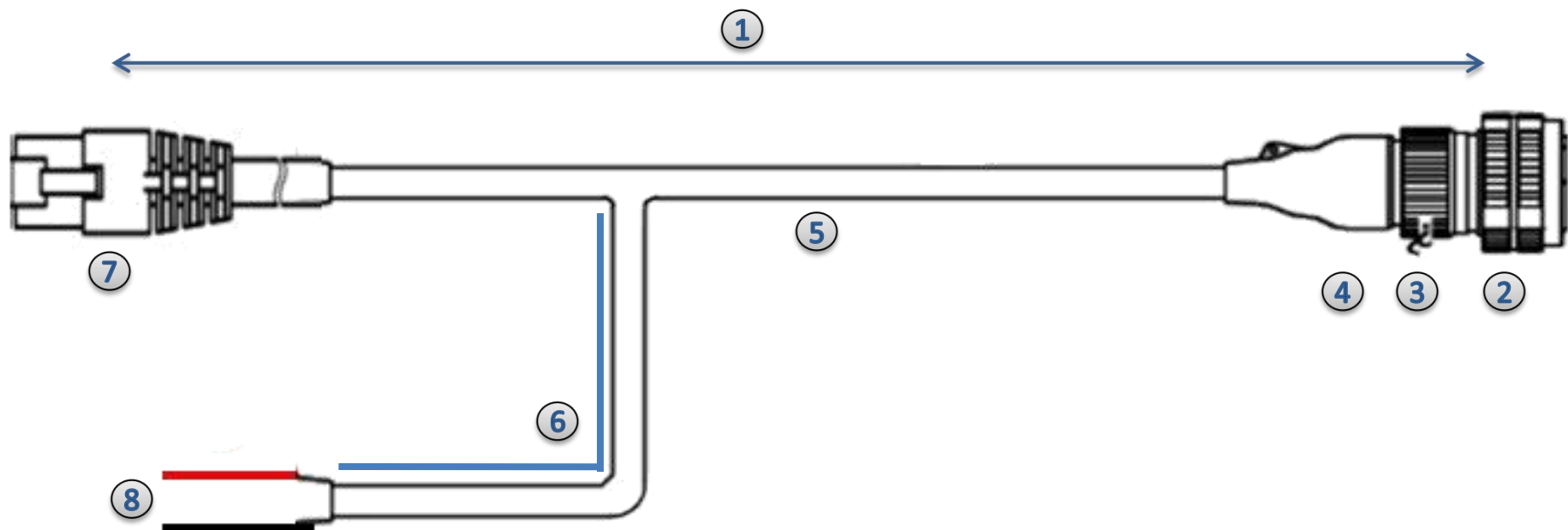
CABLE PIN LAYOUT

D38999/26KC35SN Stainless Steel Hermetic Connector

PIN	DESCRIPTION	PIN	DESCRIPTION
1	NC	12	ETHERNET2 (6) RX-
2	NC	13	NC
3	(+9 TO +36VDC) INPUT POWER	14	NC
4	GND INPUT POWER	15	NC
5	(+9 TO +36VDC) INPUT POWER	16	NC
6	GND INPUT POWER	17	NC
7	NC	18	NC
8	NC	19	NC
9	ETHERNET2 (1) TX+	20	NC
10	ETHERNET2 (2) TX-	21	NC
11	ETHERNET2 (3) RX+	22	NC

CABLE PART NUMBERING INDEX

#	P/N	DESCRIPTION
1	[LEN1]	Total Cable length (meters)
2	D38999/26KC35SN	Mil. Std Stainless Steel connector (200°C, firewall capability, 500 hour salt spray resistance)
3	RQND-40S2-S-1307	Stainless Steel Backshell
4	202K121-25-0	Boot
5	Cable RQT1601875	6*20AWG + SPEC55 (RAYCHEM DR-25)
6	Cable RQT1601875	6*20AWG + SPEC55 (1m) (RAYCHEM DR-25)
7	RJ45 Ethernet	Main Ethernet connector
8	Power Wires	20AWG For 9V-36V input



MECHANICAL DRAWING

CABLE PIN LAYOUT

D38999/26KC35SN Stainless Steel Hermetic Connector

PIN	DESCRIPTION
1	NC
2	NC
3	(+9 TO +36VDC) INPUT POWER
4	GND INPUT POWER
5	(+9 TO +36VDC) INPUT POWER
6	GND INPUT POWER
7	NC
8	NC
9	ETHERNET2 (1) TX+
10	ETHERNET2 (2) TX-
11	ETHERNET2 (3) RX+

PIN	DESCRIPTION
12	ETHERNET2 (6) RX-
13	NC
14	NC
15	NC
16	NC
17	NC
18	NC
19	NC
20	NC
21	NC
22	NC

CABLE PART NUMBERING INDEX

#	P/N	DESCRIPTION
1	[LEN1]	Total Cable length (meters)
2	D38999/26KC35SN	Mil. Std Stainless Steel connector (200°C, firewall capability, 500 hour salt spray resistance)
3	RQND-40S2-S-1307	Stainless Steel Backshell
4	202K121-25-0	Boot
5	[LEN2]	Chained Cable Length (meter) from split
6	Cable RQT1601875	6*20AWG + SPEC55 (RAYCHEM DR-25)
7	Cable RQT1601875	6*20AWG + SPEC55 (1m) (RAYCHEM DR-25)
8	RJ45 Ethernet	Main Ethernet connector
9	Power Wires	20AWG For 9V-36V input

