DIPOL
Explore Your Night

Thermal imaging scope

D75TS PRO

D55 TS PRO

D40TS PRO

MANUAL

ENG

CONTENT

ATTENTION!
Before putting the appliance into operation, carefully read the present operating instructions!

SCOPE OF DELIVERY

- D40TS PRO/D55TS PRO/D75TSR PRO device
- Cordura pouch
- Lens cleaning cloth
- Manual
- USB cable with locking cap

IMPORTANT NOTES & WARNINGS

Never look with the device in the sun or other intense heat sources, this can lead to damage of the sensor!

• Protect the device from strong side impacts.
• Only use optical cleaning cloths when cleaning glass surfaces.
• Remove the batteries to store.
• Use batteries and power supplies from reputable manufacturers.
• Wait 20 seconds before switching the device on again.

APPLICATION

The scope is designed to observe moving and immovable objects in different lighting conditions as well as limited visibility (fog, dust, etc.).

The device can be used to display locations and objects of a temperature different from the environment.

Please note that the use of the device is restricted in many European countries without a special permit. Follow state laws and applicable legislation!

DESIGN

1. ON/OFF button
2. Objective rubber cover
3. Focusing knob
4. MENU controller
5. Battery compartment
6. Power-on indicator
7. INVERT button
8. REC button
9. ZOOM button
10. USER button
11. Micro USB sloth
12. Jack 2.1 sloth
13. Support weaver rail
14. Eyepiece

TECHNICAL DATA   D75TS/D55TS/D40TS

Sensor, pixel/pitch	384x288, 17μm
Micro display, pixel	OLED 1024x768
Focal length/aperture ratio	F75/1,2 / F55/1,0 /F40/1.0
Eye relief distance, mm	55
Magnification	3.5X /2.8X/ 2.0X
Field of view	5.0°x3.8°/ 7.1°x5.3°/9.3°x7.0°
Detection range (about Johnson crit.), m	3800 / 2700 /2000
Spectral range, micrometre	8-14
Frequency, Hz	50
Colours / Inversion	9+1 / yes
Max. impact load, G	600
Dioptres range, dptr	±4
Batteries, type	2 x CR123A
Accumulators, type	2 x LC16340
Outer supply: Jack 2.1	9,5-14,5 V
Outer supply: micro USB	5 V
Working time with full batteries (+20°C)	4 hours
Operational temperature, °C	- 20 ... +50
Videorecording temperature, °C	-15 ... +50
Degree of protection	IP66
Dimensions, mm	253x102x106/ 234x102x106/ 212x102x106
Weight, kg	1.0 / 0.85/ 0.8

PERFORMANCE CONTROL

Insert the batteries according to the polarity shown on the battery compartment (5) and remove the lens cover (2).

Switch on the device by pressing the ON / OFF button (1). The control indicator (6) now lights up red. The complete switching on process should not take longer than 3-5 seconds. The device is completely ready for operation after the following view appears.

x1 ⊡ BRGT 10   U1 ▥
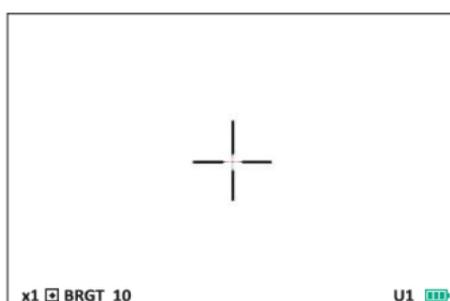
If the light indicator does not light up or blinking and the battery status indicator at the bottom right of the display is not visible or blinking, the battery charging or charging of external power sources must be checked.

If the power supply taking place via the micro USB slot, a USB symbol will be displayed instead of the battery status sign.

While using rechargeable elements instead of batteries, the battery indicator changes its colour to blue.

After using the device, close the objective with the lens rubber cover (2) and switch off the device by pressing the ON/OFF button.

OPERATION & QUICK SETTINGS

Colour inversion
Briefly press the INVERT button (7) to select the required image polarity: e.g. "hot black" or "hot white". All existing colours can be inverted. The selected polarity is shown on the display for a moment ◈ (normal) or ◆ (inverted).
Micro display stand-by mode:
To switch off the display temporarily (to save power) shortly press ON/OFF button (4). To activate it, press the ON/OFF button again.

Quick settings: display & thermal sensor
With the MENU controller (4) you can adjust the *brightness of the display* (Display Brightness / BRGT), the *sensor sensitivity* (Thermomatrix Sensitivity / Sens), *digital image enhancement* (Image Detail Enchancement / IDE) and *sensor performance level* (Thermal Image Gain / Gain).

The individual setting modes can be seen on the display in status bar (here e.g. BRGT - microdisplay brightness):

x1 ⊡ BRGT 10   U1 ▥

To adjust the *brightness* of the display (BRGT), choose the suitable value from 1 to 30, turn the MENU controller (4).

By pressing and turning the multifunction button (4) you can switch between the individual settings and change their values.

To set the optimal *sensor sensitivity* (values from 40 to 80), turn the MENU controller (4) in the selected sensor sensitivity mode (Sens).

To set the optimal level of *contrast/digital image enhancement* (values from 0 to 7), turn the MENU controller (4) in the selected (IDE) mode.

To set the optimal *sensor performance* (Gain), choose the suitable value from -10 to +10 by turning the MENU controller (4).

By pressing and turning the multifunction button (4) you can switch between the individual settings and change their values.

Video recording
To switch on video recording mode press shortly REC (9) button. In status line inscription «REC» appears, then digital record timer switches on. To stop it press the button once again. In details the process of video recording is described in main menu.

Pay your attention, if power supply charge is too low, video recording doesn't work. If during recording power supply charge becomes too low the record stops automatically.

BASIC MENU

To call up the main menu, keep the MENU
multifunction button (4) pressed until the main
menu appears in the field of view.

Basic menu	
User profile	User1
Color palette	1
Palette on button USER	1
Thermal image gain	+2
Display brigtness	10
Thermal sensitivity	50
Image Detail Enhancement (IDE)	0

To move up and down in the menu, turn the
MENU controller (4) in each direction. Choose
menu lines by briefly pressing the MENU
controller (4). Exit menu lines by pressing the
MENU controller (4) again.

To exit the main menu, press and hold the
MENU controller (4). The main menu also
disappears automatically after 15 seconds of
inactivity.

The selected setting modes with their current
values are shown at the bottom of the status bar.

User Profile
The four sensor and image quality settings
described above can be saved along with the
selected Colour palette, Colour polarity,

prefered colour pallete for quick access on botton "USER" and special "super contrast display mode" as *individual user profiles.*

The device already has three pre-installed profiles: Fix 1 Woods, Fix 2 City, Fix 3 Mountains. If one of these profiles is selected, the difined individual settings made previously are no longer available.

However, each profile (User 1, User 2, User 3) can be customized. Press and turn the MENU controller (4) to access the corresponding positions and sub-positions of the main menu. The selected settings or their changes are saved automatically in the respective profile.

Colour palette
You can choose from 9 (plus standard setting) available colour palettes, which are displayed when you first call up the "Color palette" menu item. Note that the settings of the selected palette are saved after the device is switched off.

Change of Colour palette
(Palette on button USER)
In this way, you can quickly select a different colour palette than defined in the basic setting (Colour Palette).

Thermal image gain
Here you can determine the performance of the thermal imaging sensor. This setting process is

also described in detail in the *operation & quick settings* chapter.

Display brightness
The brightness setting of the micro display can be made in this menu item. This setting process is also described in detail in the *operation & quick settings* chapter.

Thermal sensitivity
The settings for the sensitivity of the thermal sensor can be adjusted here. To set the optimal sensor sensitivity (values from 40 to 80), turn the MENU controller (4).

Image Detail Enhancement (IDE)
Settings for increasing the general image quality and detail. This setting process is also described in detail in the *operation & quick settings* chapter.

Super contrast display mode
Increases the contrast and image quality, especially with insignificant temperature differences for observed objects or backgrounds.

Reticle Profile
The device have 7 individual reticle profiles that you can be customized for various conditions: distanses, rifles, ammos.
In Reticle profile you can adjust following parameters: *Reticle type, Reticle color, Reticle*

brightness and *Zero the scope*. Press and turn the MENU controller (4) to access the corresponding positions and sub-positions of the main menu. The selected settings or their changes are saved automatically in the respective profile.

Reticle type
You can choose from 5 available reticle type. Turn the MENU controller (4) to choose prefered reticle type.

Reticle color
You can choose from 6 available reticle colour.
Reticle brightness
Turn the MENU controller (4) to choose appropriate level of brightness.

Zero the scope
In this menu item you can adjust center of impact in selected *Reticle profile*.
Mount the device on your weapon and pointed on a small warm object (e.g. a hand warmer) at a distance of approx. 100 m and fix it solidly in this position e.g. in a vice.
Turn on the device and look at the object through the scope. If the object not match with center of aiming reticle, enter in *Basic menu* and choose *Zero the scope* item. Press MENU controller (4). You will see symbols and axe arrows in upper status bar. Turn the MENU controller (4) to adjust center of aiming reticle on X-axe according the warm object. Symbols in

upper status bar will change according your adjustment (also your reticle change position in the field of view). You can adjust reticle from -99 to +99 (one click equal 11 mm on 100 m distance for D75TSR and 16 mm for D55TSR). After it press controller and adjust center of aiming reticle on Y-axe.

If you not matched aiming center with warm object from first step, repeat procedure until succeed.

Your adjustment is saved automatically in the respective profile.

For leave adjustment mode press and hold MENU controller.

In Zoom x1, x2 modes reticle changes position in the field of view, in x4 mode – reticle is fixed and field of view move around it.

USB transfer mode

Enables the copying and deletion of video files from the built-in memory card. If you select this menu item and the words "Connection is being established ..." appears on the screen, the device will soon be visible as a flash drive when it connect to a PC.

Video recording mode

You can choose either a *normal start* or a *quick start* for video recording.

In *normal start* mode, the video recording starts with a slight delay (up to 10 seconds) after the

"REC" button (8) is pressed to switch on the corresponding module and load the software.

In the *quick start*, modules and software loading are activated just after the pressing the "REC" button. Videos are recorded up to 5 seconds faster after the REC button is pressed.

The following indicators are visible in the status bar during video recording:

REC (blinking) - Recording module active
REC   – ready to record
REC • 00:01:20 - recording
REC Saving   - video record saving to internal
                         storage.

Note, that the battery consumption is greater in the video recording mode as well as during the quick start.

To reduce power consumption, you can press and hold the "REC" button (8) for a few seconds and turn off the video module.
After that, it takes some time for to start recording video again, similar as during the normal start mode.

Please note that video recording is not possible if the internal or external power sources are not sufficiently charged. Due to that reason, the recording also can stop automatically.

Date and time stamp position

Using the date and time stamp, the date and time of the video recording can be displayed on the internal memory card.

You may choose position, where date and time symbols will be situated on video record.

Auto bad pixel correction

After an automatic correction of defective pixels, press and hold the MENU controller (4) to save changes or briefly press the MENU controller (4) to cancel the changes.

Please note, that the lens must be closed by the device during the pixel correction!

Manual pixel correction

In this mode, individual defective pixels or pixel groups can be corrected manually. Please note that the correction of a pixel group from its edges to the center must be done by gradually reducing the radius of the group.

By turning the MENU controller (4), the marking cross can be moved over the field of view (note: with constant rotation, the increment of the shift increases!).

The coordinate axis of the cross movement can be changed by briefly pressing the MENU controller (4). After the cursor is positioned as precisely as possible over the defective pixel,

briefly press the ON / OFF button (1). The pixel then changes colour.

Repeat the process with other defective pixels if necessary. To save the changes, press and hold the MENU controller (4).

Programming the buttons ("USER" button function)
In this mode, you can select one of the available menu functions for quick access via the buttons on the top of the device: colour palette (default), user profile, super contrast display mode.

Status bar position
Allows positioning of the status line/bar in the field of view or return it back to factory settings.

Status bar delay time, s
Here you can set the inactive time (in seconds), after which the status bar disappears from the screen.

OSD transparency
Allows transparent menu display while the screen is in a static state for prevention microdisplay burning.

Auto power off, minutes
Allows the device to turn off automatically after a period of inactivity (in minutes).

Date set
In this item you can set the date to be displayed during video recording. The setting is made by pressing and turning the MENU controller (4).

Time set
Here you can set the time that is displayed during video recording or video transmission.

Please note that the date and time settings are not lost after the power elements are switched off or removed.

However, if the device has been switched off for a longer period (longer than 4 months), the date and time settings may need to be made again.

Clear video record storage
Here you can delete ALL video recordings from the internal SD memory card without having to connect the device to a PC.

Language
Allows you to select the language for the user interface. Russian, English, German, Spanish are available.

Software version
Displays the version of the installed device software.

Setting reset
Here the current device settings can be reset to
the factory settings.

Please note that the settings in the user profiles
and reticle profiles remain unchanged!

Briefly press the MENU controller (4) and select
"Yes" by turning. Briefly press the controller to
confirm.

*Please note that a reset is not possible during
video recording!*

ACCESSOIRES

The device offers the possibility of connecting an external power source with 9.5-14.5 V with a JACK 2.1 connector (12).

It is also possible to supply the device with an external power source via the micro USB connector (11) with a voltage of 5 V.

POSSIBLE ERRORS & TROUBLESHOOTING

Your device is a complex optomechanical device. A repair or maintenance may only be carried out under the conditions of the manufacturer.
If the display does not appear or flash after switching on and the image is missing or flashing, the batteries may be dead or the contacts in the battery compartment may be broken.
Replace the batteries and check the contacts to the battery compartment cover (11) and contacts in the battery compartment for traces of corrosion and dirt.

If the device still does not work as intended after the batteries have been replaced and cleaning the contacts does not help, do not attempt to disassemble and repair the device yourself, even if other defects or faults occur. This can be cause major failures and loss of

warranty. Please contact the seller or the manufacturer.

Make sure that the maximum operating time of the device is achieved by using batteries of known manufacturers with a temperature of + 20° C. Using batteries of unknown manufacturers and during the wintertime, the operating time of the device may be reduced, and it does not indicate a technical defect.

STORAGE & TRANSPORT

The device should be stored in a dry, warm and ventilated room with a relative humidity of up to 80% at a temperature of 5 ° C - 30 ° C. There should be no acid fumes, alkali and other aggressive airborne contaminants in the room. Even if the device is only to be stored for a relatively short time, remove the batteries from the battery compartment.
The transport conditions depend on
climatic factors (temperature from -50 ° C to + 50 ° C, relative humidity not more than 98% at 25 ° C).

The device can be transported with any type of covered vehicles according to the transport regulations of the respective mode of transport.

QUALITY CERTIFICATE
Thermal imaging scope
D40TS PRO ☐ / D55TS PRO☐ / D75TS PRO ☐
Serial №

……………...

Sensor №

…………..…..

Release date

……………...

Quality control department

…………………...……………………………………....

WARRANTY

• The manufacturer guarantees that the quality
of the thermal monocular meets the technical
requirements, if the rules and conditions for
storage, transport and operation are observed.
• The warranty period is 24 months.
• The manufacturer repairs the unit or changes
it in the event of a manufacturer's fault during
the warranty period.

MANUFACTURER & SALES:

Manufacturer:
SPF „DIPOL" Ltd.
210033, Vitebsk, Lazo Str., 115A,
Republic Belarus
Tel. +375 212 53 00 63
www.dipol.by
E-Mail: contact@dipol.by

COMPLIANCE NOTE

 This device complies with the EMC Directive and Waste Electrical and Electronic Equipment Directive, as well as other applicable European directives, in accordance with the essential requirements and other regulations.