



TrafficCamera: How to start

A step-by-step guide to help you get started with your smart camera.

Product line: Movidius with DFS OS

Camera models: TC-B8M40-110F30 and TC-B2M7-55F70

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A step-by-step guide to help you get started with your smart camera.



Thank you for purchasing the TrafficCamera and joining the FLOW family of next-gen traffic analytic intelligence! You have purchased the most powerful and versatile traffic AI available – it is waiting in the box to be unleashed by your creativity.

We wish you an exciting journey towards a smoother and safer traffic of tomorrow. Let the traffic FLOW.

On behalf of the whole DataFromSky team

A stylized, handwritten signature in blue ink, reading "Herman".

David Herman, CEO

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Introduction

TrafficCamera is an easy to deploy and extremely universal AI video analysis solution for a variety of monitoring and control tasks. Thanks to the highly optimized video and data interpretation engine FLOW, which runs directly on the camera, it is a perfect sensor for time-critical applications including traffic control and enforcement. With open API it can be easily integrated with 3rd party systems such as smart city platforms and/or traffic controllers. Integrated fully customizable data visualization and collection functions allow to use this device as a traffic data collector.

Product applications:

- Traffic monitoring and management
- Active mobility monitoring
- Enforcement applications
- Public transport
- Parking management
- Retail
- Security

Under the hood

FLOW is a fully customizable video analysis framework for variety of traffic monitoring tasks. The full featured edge version of FLOW for the DataFromSky camera operating system (OS for short) is running on the TrafficCamera as a preinstalled application for your desired use case, be it traffic, parking, retail or security.

OS web-interface allows you to configure the camera-related settings, such as:

- Network configuration
- RTSP streaming
- Image configuration
- Time settings

FLOW engine running on the camera is configured using FLOW Insights application running on your computer, which connects to the camera. With this application, you set up analytical and data collection tasks.



The FLOW is available also on Azena store and can be installed on other camera models from different manufactures, including Bosch, Vivotek, and Hanwa. The AXIS cameras with DLPU are supported too.

Unboxing

First things first - let's check all the bits and pieces that landed on your table. Depending on the selected configuration, you should be able to find the content displayed on the next page. (Junction box and Pole mounting kit are included as extra per request)

Main parts

TrafficCamera



Junction box

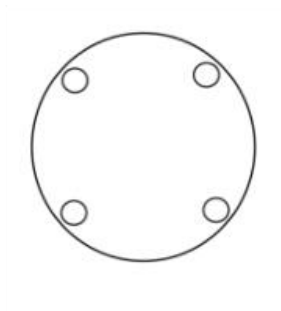


Pole mounting kit



Additional parts

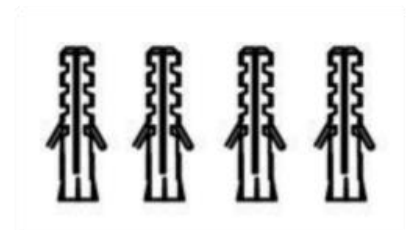
Installation sticker



4 Installation screws (Phillips head self-tapping screw TPA7-19Tx35)



4 Screw anchors (1/4"x1")



Waterproof connector



Torx wrench



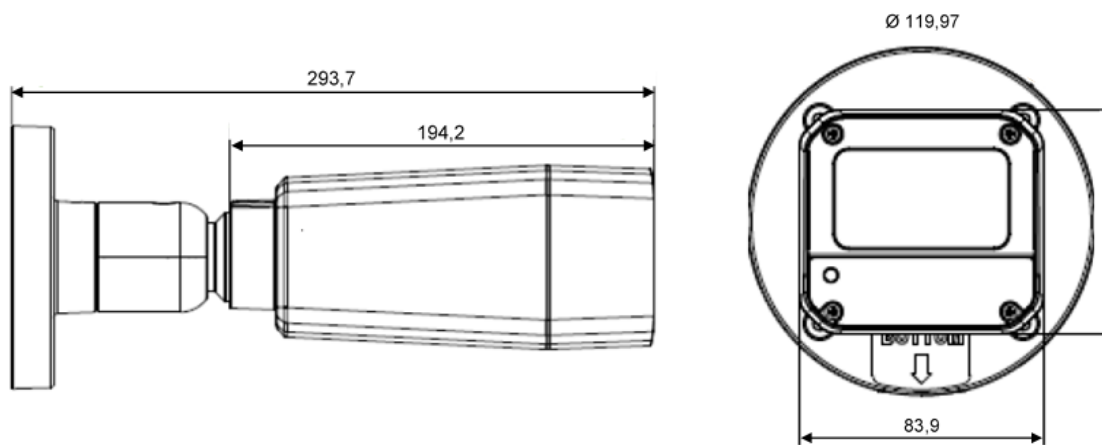
Additional smaller contents



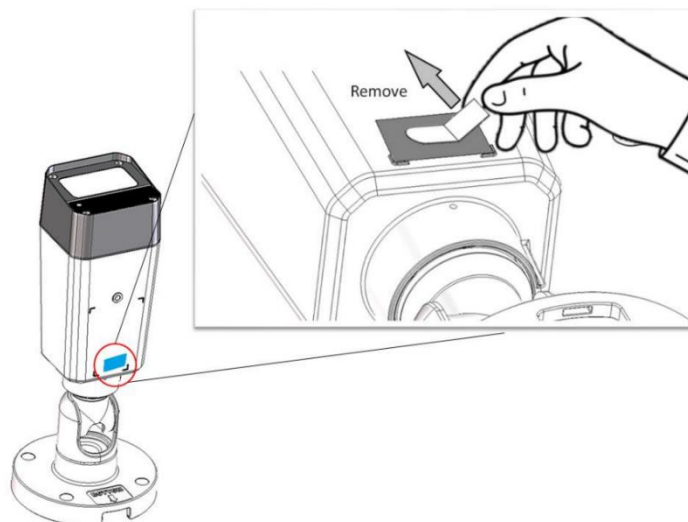
Field installation

The camera needs an Ethernet cable to connect to the network. The camera uses either POE or needs a 12V DC or 24V AC power source. If the camera is installed outside, it is necessary to use the Ethernet cable protector packed with the camera to prevent water intrusion. For other cabling please follow the guidelines from the Waterproof and Insulation Procedure section.

Below you can see the camera dimensions in millimeters to help you determine a suitable location where you can place it. Be sure to check before the installation that there is sufficient space for you to install the camera in the desired position.



Make sure to remove the anti-moisture sticker as shown in the image below!
Before mounting the camera onto its installed position, please remove the anti-moisture sticker to get the air vent to start working.



TrafficCamera is prepared for permanent outdoor installation thanks to its rugged enclosure with IP67 rating and IK10 standard. Here are a few points to follow to achieve a reliable installation:

- Install the TrafficCamera higher than 3m above ground in order to prevent unauthorized access
- Use cabling certified for permanent outdoor use
- Secure unused connectors against water intrusion
- Attach the unit securely to a light pole or other permanent structure. Consider significant loads that might be imposed by strong winds, snow, etc... Optional mounting accessories can be employed to account for this.

How to install the TrafficCamera on a pole

To install the camera on a pole you will need to use a special mounting accessory such as the one pictured in the optional mounting accessories. Before installation check that the metal strips for the mounting accessory have sufficient length to be installed on the desired pole.

1. Install the respective parts of the junction box on the camera and the pole mounting accessory.
2. Attach the pole mounting accessory to the pole. Use the attached metal strips to do so. Make sure to use both of them to balance the mounting plate. Install and tighten them one at a time. Start with the strip on the top.
3. Fit the Ethernet cable through the holes and connect it to the camera Ethernet connector. The correct Ethernet cable connection procedure is described in How to install the network cable section...
4. Reassemble the junction box to attach the camera to the mounting accessory.

How to install TrafficCamera on a wall

The camera can be mounted on ceilings or on walls. However, keep the device away from water and moisture if possible. The following section describes how to secure the back plate to the ceiling.

1. Use the sticker as the guideline for drilling holes for cables and installation screws. Make sure the diameter of the hole is big enough for the cables to go through. The center of the sticker should align with the center of the cable hole on the wall.
2. Drill 4 holes on the wall.
3. Insert anchors into the holes.
4. Install the cables. Be sure to waterproof the cables (refer to waterproofing cables section).
5. Put the cables through the hole in the wall and connect them to respective sockets.
6. Adjust the camera's viewing angle (refer to Adjusting the camera Viewing Angles section below).

7. Fix the camera on the wall or ceiling using 4 installation screws.



Adjusting the Camera Viewing Angles

The camera is designed for easy and flexible installation.

- Adjust the camera's viewing angle by rotating its base (pan).
- Adjust the camera's viewing angle by rotating and tilting its body (roll and tilt).
 - Adjust the focus and zoom of the camera using a live view accessible through the web interface (this is described in more detail in the camera web interface section).

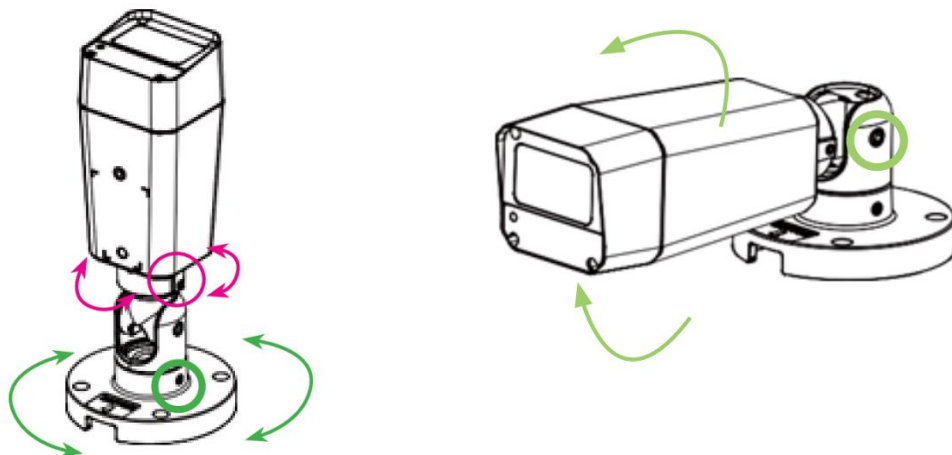
To adjust the angles, use the provided torx wrench to loosen the respective screws shown below. Be Sure to tighten the screws after the adjustment is finished.



If you find it hard to tilt the camera, loosen the base (Pan) screw a little. When rotating the camera, make sure the cables are not entangled.



If installing the camera on the wall, verify the orientation of the camera is correct (with "BOTTOM" indicated on the camera base) for smoother cable placement and proper waterproof measures.



Camera framing

Camera positioning and framing are defining parameters for video stream quality which is the main driving factor of AI traffic analytics accuracy. Therefore, we do recommend paying appropriate attention to fine-tuning the acquisition geometry. Here are a few points to consider:

- Camera image center should be ideally identical with Region of Interest center
- Align the camera with horizon – avoid roll
- Tilt the camera to have ROI (region of interest) just a little bit below the centerline of the image
- There should be sufficient padding between the image borders and the ROI
- Incidence angle between the camera lens axis and the ground plane should be ideally 30-45 degrees in order to avoid reflections and dynamic occlusions
- The objects in ROI should be fully visible; at least 70 % of the object area should be visible to achieve high accuracy (be aware of dynamic/static occlusions)
- Do not capture the sky – capturing the sun can have negative impact on video analytic (tilt the camera down if necessary)
- If possible, orient the camera perpendicular to the traffic flow or aligned with the flow, in the direction of travel - this will help to avoid reflections from vehicle lights in night scenes
- After you set up the camera for the first time and start detecting traffic you might need to come back to adjust the zoom and ROI depending on your detection needs. Common mistake is the assumption that what we see on the edges will get detected but ideally the location where we want to detect objects reliably should be more towards the center of the camera view.

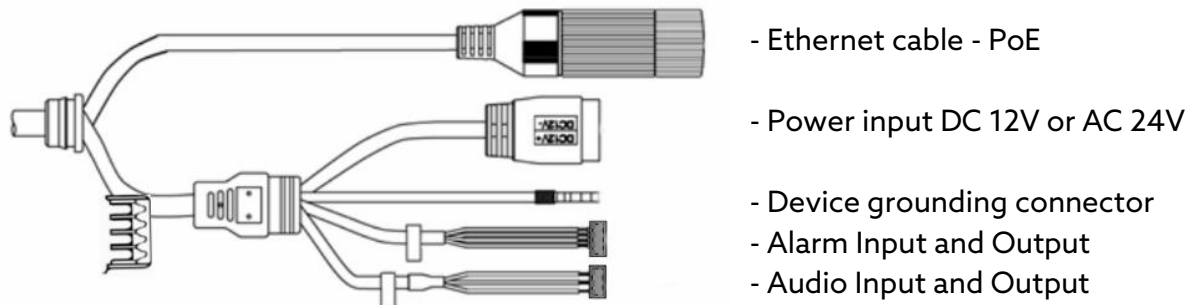


Region of Interest

Powering and data connection of TrafficCamera

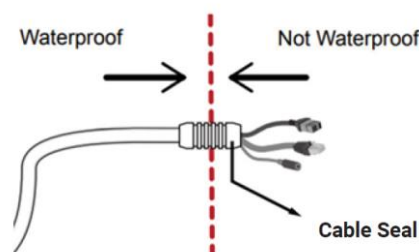
The camera has 2 main power options: (in the following section refer to A.) or B.) for your specific power option)

- A. 12V DC/ 24V AC that must be delivered from power supply to the camera power connector
- B. POE+ (Power over Ethernet) - for connection to POE - devices with POE standard capable of powering devices via an Ethernet cable



Cables installation – general guidelines

- For outdoor installation, install a lightning arrester and employ proper grounding to protect against lightning.
- Adhere to the power voltage requirement of the camera. Be sure to separate different voltages (high and low) of power supplies with a distance of at least 5 cm to avoid damage to the device.
- Please keep the tag if you need to trim off the end of a cable.
- The unshielded wires at the end of the cable are not waterproofed, please employ proper waterproof and insulation measures (refer to Waterproof and Insulation Procedure).



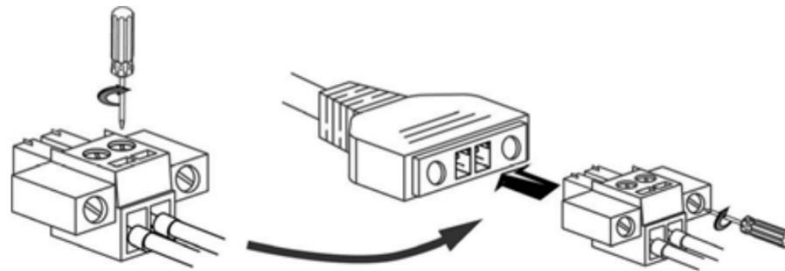
A. How to install the Power Wire

Read this section only if you are powering the camera via 12V DC/ 24V AC power supply, otherwise skip to Ethernet cable installation.

Connector types:

- Power connector type on the camera cable is: DEGSON 15EDGRM-3.5.
- Counterpart to this power connector is: DEGSON 15EDGKM-3.5.

The size of power cables should be at least 22 AWG. The ground impedance should not exceed 5 ohms. The picture below shows how the power cable should be installed.



To reduce the risk of personal injury from electrical shock and hot surfaces, power off the device and be sure to disconnect the power cord from the electric outlet and allow the internal components to cool before you handle them.

A. and B. Ethernet cable installation

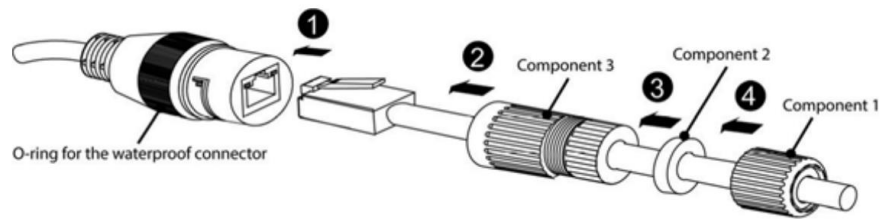
This section is important for both power options as Ethernet cable is always needed to provide the data/network connection.

For standard deployment these scenarios are considered:

1. Connection to Ethernet device with a PoE capability and that supports one of these POE standards (802.3af or 802.3at) for powering IP cameras (this way the camera gets both the network connectivity and power through the Ethernet cable).
2. Connection to device with Ethernet cable only for connecting the TrafficCamera into the network (internet connection only via this setup).

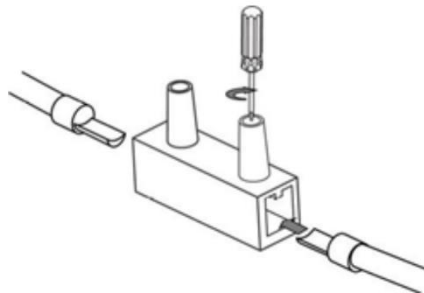
How to install the network cable

Disintegrate the waterproof connector into 3 parts. Thread the network cable through these parts in the sequence shown below and assemble the waterproof connector. Make sure the waterproof connector is securely installed or the components may come loose later. The following diagram shows the installation of the network cable.



How to install the ground wire

The attached ground wire of the camera has to be properly grounded to protect against lightning strike. The following diagram shows how the ground wire should be installed.

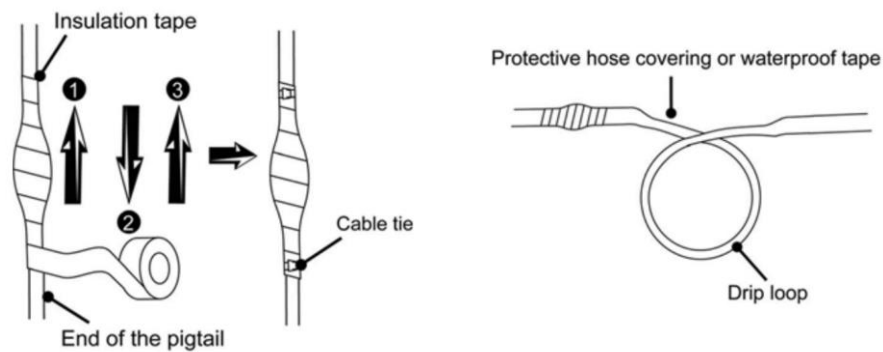


Waterproof and insulation procedure

Waterproof and insulate all cables including power cables, network cables, etc...

1. Wrap one layer of the insulation tape around the junctions of the wires.
2. Apply three layers of waterproof tape: Wrap the waterproof tape around the wire from the top downward along the wire. Wrap the waterproof tape around the wire but in the opposite direction. Wrap the waterproof tape around the wire from the top downward again.
3. Seal the top and bottom edges with cable ties.
4. Use waterproof tape to wrap the rest of the cable and make a drip loop the lowest point of the cable. Make sure it is installed tightly for effectiveness.

Enclose all cables inside the Junction Box to prevent any water intrusion. Make sure to follow the waterproofing procedures shown in the pictures below.



Maintenance

Lens Cleaning

Use a microfiber cloth for smudges and fingerprint cleaning. You can also use special wet wipes for optics, which contain a cleaning liquid. A combination of cloth and cleaning liquid is a possible option as well.

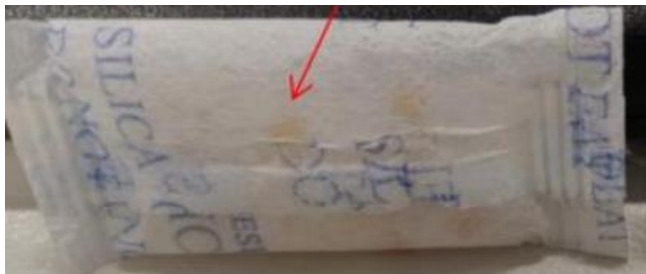
Desiccant Bag Replacement

If the camera is experiencing fogging, you will need to replace the existing desiccant bag (The rectangular object inside the camera housing.)

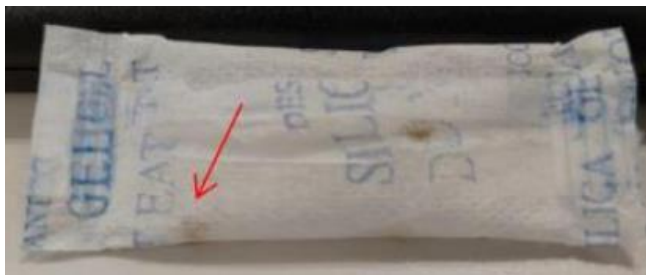
Verification of Desiccant Bag's Functionality

The remaining functionality of the desiccant bag can be identified by the color of the silica gel beads among the desiccant. The following colors are associated with the following states:

Bright Yellow - Dry



Light Green - Some moisture is absorbed



Dark Green - A considerable amount of moisture was absorbed



To replace the desiccant bag, please follow the steps mentioned in the following sections, and the procedures should be done by the engineering staff.

Replacing the Desiccant Bag

Step 1.

Open the camera and locate the desiccant bag. The desiccant bag will be close to the lens or attached to the camera cover depending on the camera model.



Step 2.

Remember the place of desiccant bag and remove it. Note: Be careful, do not exert any pressure in the camera lens or other components



Step 3.

Open the aluminium foil pack that is included in the camera box. The desiccant bag is included inside it.



Step 4.

Stick a double-sided tape on the desiccant bag. Pull the adhesive tape cover in order to attach the desiccant bag to the camera. (Note: Some of bags already stick a double-side tape, so just remove the tape cover then attach the desiccant bag to the housing.)



Step 5.

Place the desiccant bag in the same place as the old one. Be sure to press it tightly so that it won't fall from its place.



Step 6.

Put back the cover of the camera as soon as the bag is replaced. (If you leave it open for too long, the desiccant bag will start absorbing water from the environment.)

Step 7.

Make sure that the cover is closed tightly

Camera web interface and camera settings

This camera web interface allows you to set up and monitor a variety of parameters of the smart camera for example the zoom settings, IR mode, network settings, password and more. In this section we will cover the most important ones.

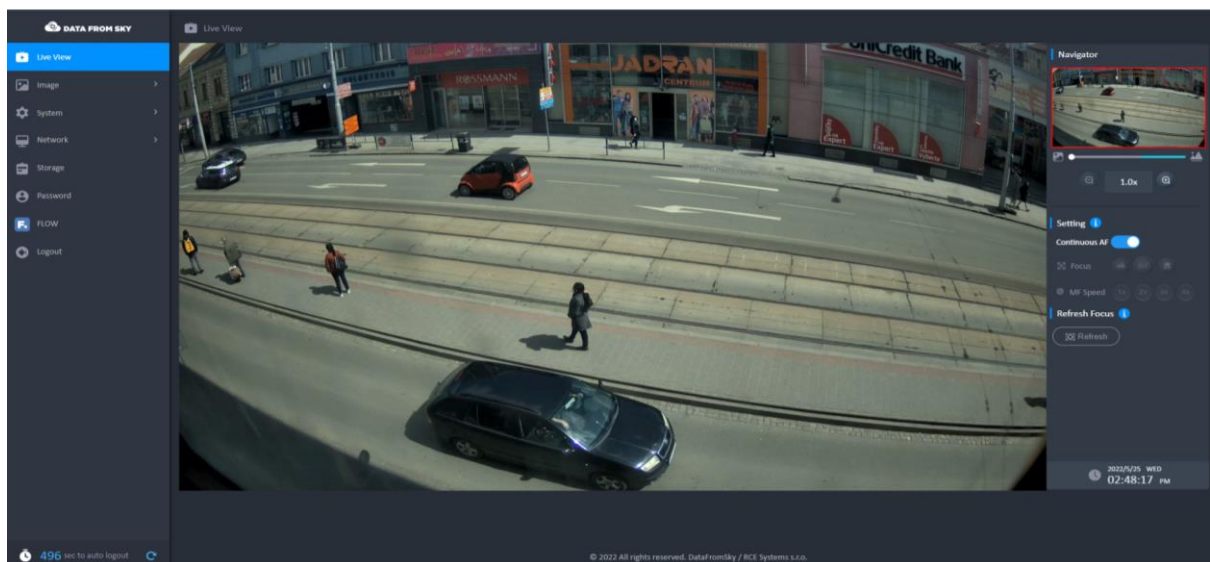


By default, the camera has static IP address **192.168.50.10**. For a camera to communicate properly, it must be in the same subnet as the network adapter (computer) to which is connected.

The camera's web administration interface can be accessed using the URL: <https://192.168.50.10>. You can sign in with the following default login details:

- **login: flowadmin**
- **password: Admin123456789+**

In the **Live View** section, you can see a preview of the camera, adjust the zoom and set the focus settings. By default, continuous autofocus is enabled.



To prevent unwanted refocusing during the camera operation, we strongly recommend switching to manual focus and configuring the lens as needed.

Another important section is the **Image section** with multiple sub sections. All the Image settings directly affect the video being streamed to FLOW Insights. In this section you can for example find brightness, contrast, saturation, sharpness and gamma settings, as well as video rotation, exposure mode and more. IR cut Filter and Exposure settings are under the **Advanced settings**. You can see these different settings visualized in the Schedule section. All these settings affect the quality of the video input for image processing.

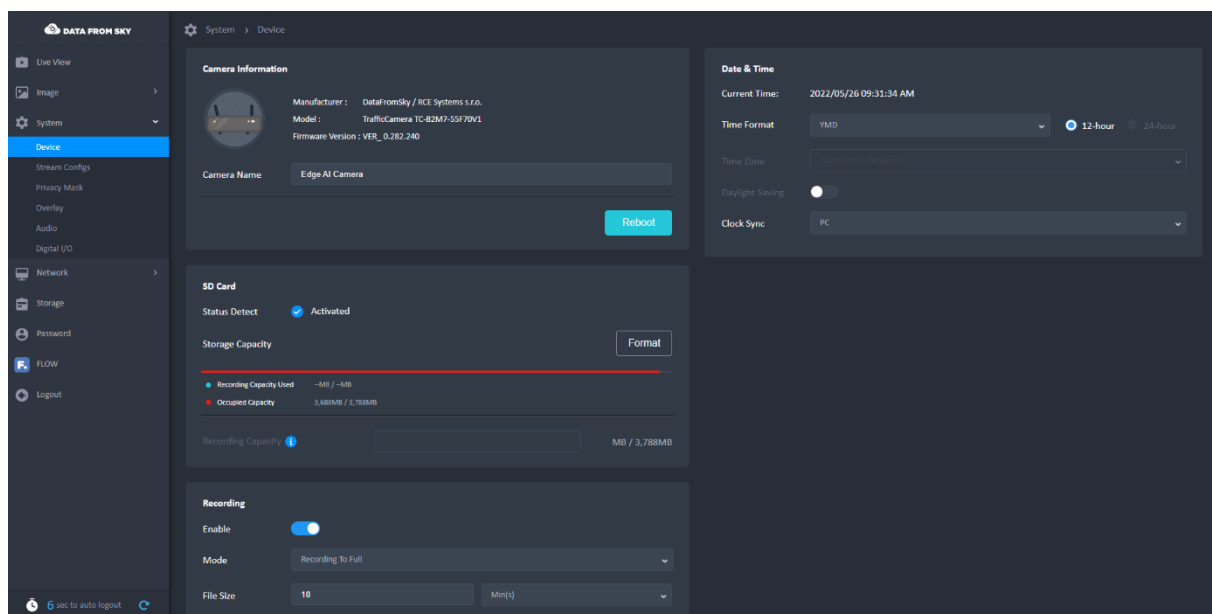


For night scene you might want to consider choosing the **Priority exposure** mode so that you can better avoid overexposure from oncoming vehicles.

In the **System** tab the first section is called **Device**. Here you can do critical actions like **rebooting the camera** and configuring the camera **time settings** including synchronization mode. The supported time synchronization modes are:

- PC
- NTP
- IEEE 1588-2008
- Manual

Here you can also check available space on the SD card, **change internal camera time** or enable video recording.



In **Stream Configs** you can change the parameters of the main video stream, and set up and change settings of additional RTSP streams. The streams cannot be renamed and has following fixed naming-scheme:

- Web stream: LiveH264_0 – this configuration cannot be changed (it is used by OS web-interface as well as FLOW app)
- Main stream: LiveH264_1 – this configuration is subject to change
- Second stream: LiveH264_2 – this configuration is subject to change

You can change the stream format (video codec), resolution, framerate, audio format, rate control, video quality and GOP Length. Supported codecs are H.264 and H.265 for the first stream and H.264, H.265 and MJPEG for the second stream. To check the video quality on your RTSP player, use the following address:

rtsp://[LOGIN]:[PASSWORD]@[CAMERA_IP_ADDRESS]/[CAMERA_STREAM], example:

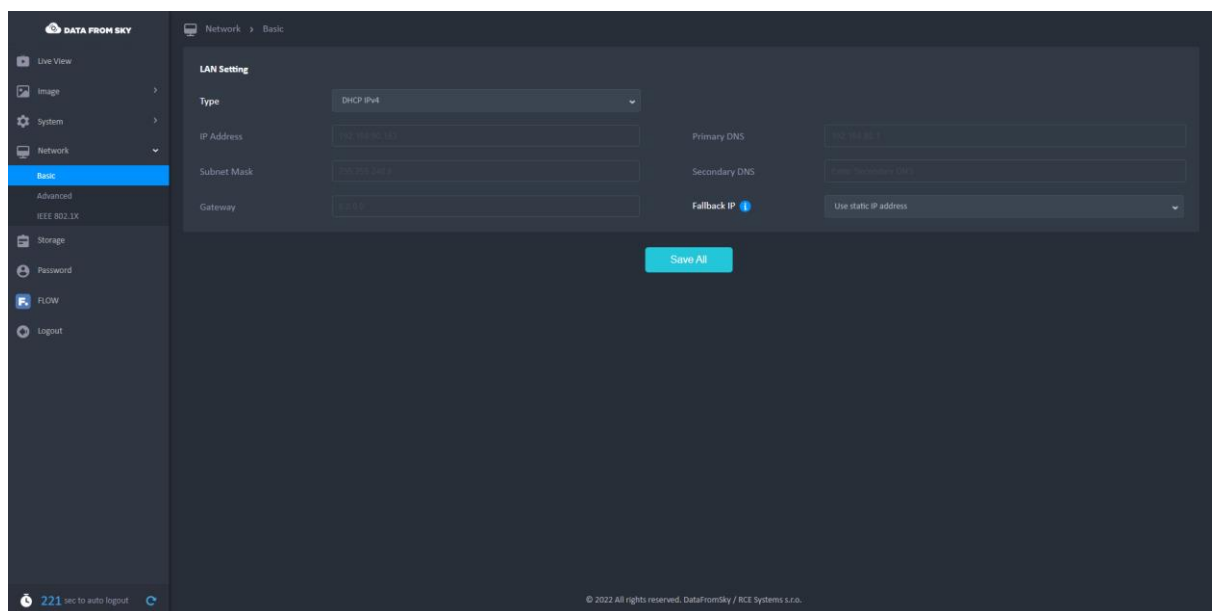
rtsp://flowadmin:Admin123456789+@192.168.50.10/LiveH264_0



The configuration of main and second RTSP streams do not affect the video quality for image processing. The configuration of the web stream cannot be changed.

In the **Privacy mask** you can set first level, solid color “anonymization” of the video. Next is the **Overlay section** where you can visualize time, camera name and even images directly into the camera stream.

Next is the **Network** section. Here on the first page (Basic) you can choose between DHCP or a static IP address. By default, DHCP is disabled and camera has static IP address 192.168.50.10. In the advanced settings you can turn on/off WS Discovery and mDNS and in the next tab the IEEE 802.1X.



The last important section is the **Password tab** where you can change the password for the camera web interface. This covers all the important Web interface settings.

RTSP Streaming

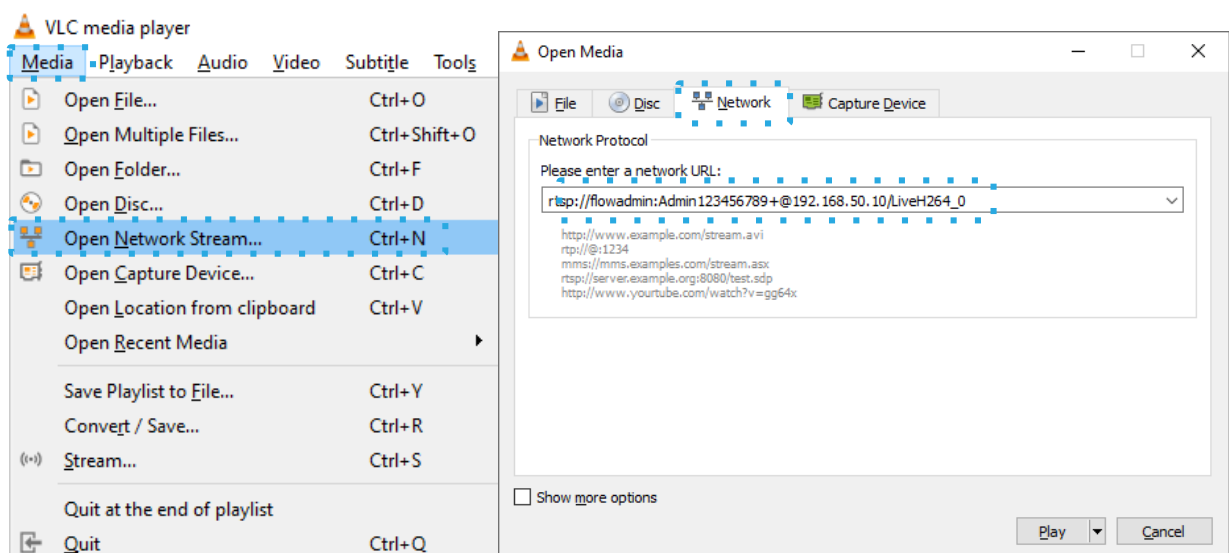
The smart camera supports RTSP streaming. You can use the stream to check if your camera is operational and sending video data without logging into FLOW Insights. The camera has two streams by default i.e., Web stream and Main stream. The configuration of the Web stream cannot be changed by user. In addition, you can create another stream with different configuration called Second stream.

Based on the ending of the RTSP link you can access the different camera streams you have enabled, LiveH264_0 (web stream that you see in the camera interface and in FLOW), LiveH264_1 (main stream) and LiveH264_2 (second stream).

To access the stream, enter the RTSP stream link in the format:

`rtsp://[LOGIN]:[PASSWORD]@[CAMERA_IP_ADDRESS]/[CAMERA_STREAM]` so for example: `rtsp://flowadmin:Admin123456789+@192.168.50.10/LiveH264_0`

To test it, enter the RTSP stream address in a media player such as VLC media player as shown below (to see the RTSP stream in VLC player you need to set it to at least 10 FPS).



If the video stream is not working you might have the wrong RTSP address or RTSP is not enabled on the camera. The camera access also might not be available on your PC in which case, you should contact administrator of your local network.



To change the video stream quality/parameters settings – go to the camera Web Interface.

FLOW – connect and define traffic analytics

FLOW is an AI-based traffic video-analytical engine that runs on the camera. To configure various traffic tasks on the camera you need the FLOW Insights application which can be downloaded here: <https://datafromsky.com/flow-versions/>

Here you should select the correct version of FLOW Insights to match the version of FLOW running on the camera. If you have the latest version of the application, you get the latest FLOW Insights version here:

http://www.datafromsky.com/download/flow/demokit/FLOW_Demokit.exe



If you do not know which version of FLOW you have, try connecting with any version of FLOW Insights and you will be informed of the required version.

How to connect to the camera with FLOW Insights

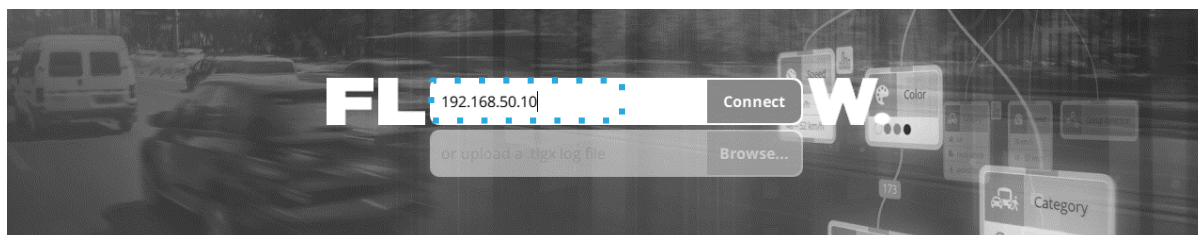
First, download the FLOW Insights desktop application and install it on your computer. It needs to be a 64-bit Windows platform which is the only one currently supported. Make the device accessible via network.



We can also provide also a Linux version of FLOW Insights on request. Please contact us at support@datafromsky.com.



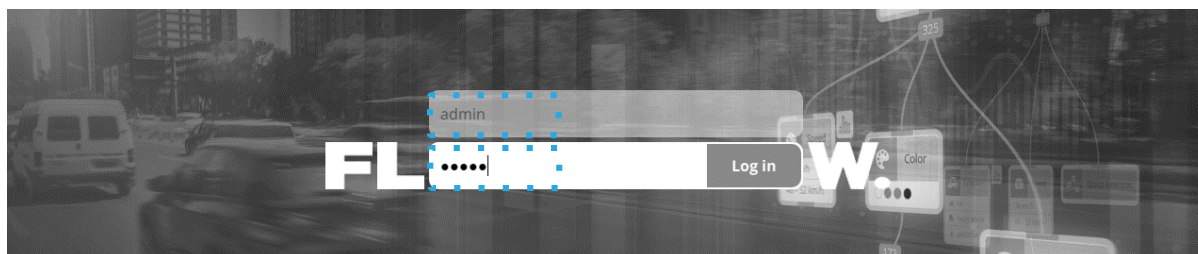
Launch FLOW Insights on your PC, tablet, etc... Click on start FLOW in the third window on the bottom left named "Traffic survey or FLOW device live stream" In the first field, enter the camera's IP address in the format xx.xx.xx.xx. Leave the second field empty and hit enter.



By default, the camera has static IP address **192.168.50.10**. For a camera to communicate properly, it must be in the same subnet as the network adapter (computer) to which is connected.

On the next screen, log in with the following credentials:

- **Login: admin**
- **Password: admin**



Note that you should change this password when you log into FLOW Insights in the user settings section.

How to define traffic analytics

FLOW framework is a complex system that supports a variety of hardware devices. FLOW currently runs on TrafficCamera, TrafficEmbedded, TrafficXRoads TrafficEnterprise and TrafficDrone (mobile processing unit). No matter the hardware requirements or use case you are able to work in the same system. The system is regularly updated with new functions, performance improvements and bug fixes. We have a dedicated help section on our web where you can find a plethora of articles about FLOW, how it works or how to set up the analytics for a variety of use-cases.

Next you can explore all of the articles about FLOW here:

<https://intercom.help/datafromsky/en/collections/2019942-flow-and-flow-insights>.

Note: You can use the search bar on the top to help you find what you are looking for.

Basic FLOW principles:



We suggest starting with the FLOW basics article:

<https://intercom.help/datafromsky/en/articles/3773025-the-basics-of-flow-insights>

Data filtration - How to use FLOW filters and operators:

We also suggest reading some of the articles about the various types of filters such as the spatial filters article which is the most important one.

<https://intercom.help/datafromsky/en/articles/3656473-spatial-filters-in-flow-insights>

Visualization – widgets and dashboards:

To learn everything, you need to know about widgets and data visualization please read this article:

<https://intercom.help/datafromsky/en/articles/3666528-using-widgets-to-view-data-on-the-dashboard-in-flow-insights>

Tutorials – how to create:

<https://intercom.help/datafromsky/en/collections/2019942-flow-and-flow-insights#use-case-tutorials-how-to-series>

Highway camera: <https://intercom.help/datafromsky/en/articles/3854223-how-to-create-highway-traffic-camera-with-flow>

The best way to learn FLOW is by applying it to a specific use-case making it easily understandable. Choose a specific use-case guide that you like and follow along.

Generic:

Some general guidelines that you may find useful on how to capture video can be found here: <https://intercom.help/datafromsky/en/collections/2232238-general-faq>

In case you have not found what you have been looking for please get in touch with us using the live chat or send us email to support@datafromsky.com.

Update the FLOW

The FLOW Framework is continually being developed, new functions are being added and identified bugs are being fixed. New version for the camera are provided in the form of update packages available on this address: <https://datafromsky.com/flow-versions/> - on the page find the section related to the product line "TrafficCamera – Movidius".



Important note: There is a **major change** updating TrafficCameras with version **lower than 1.15.6**. To update such devices please get in touch on info@datafromsky.com and we will update it for you.

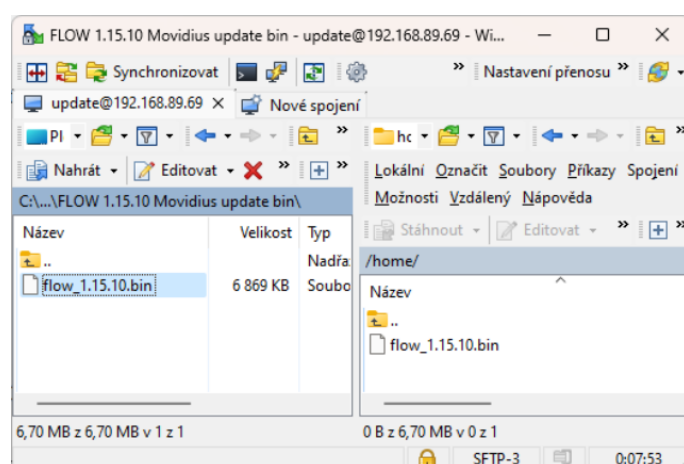


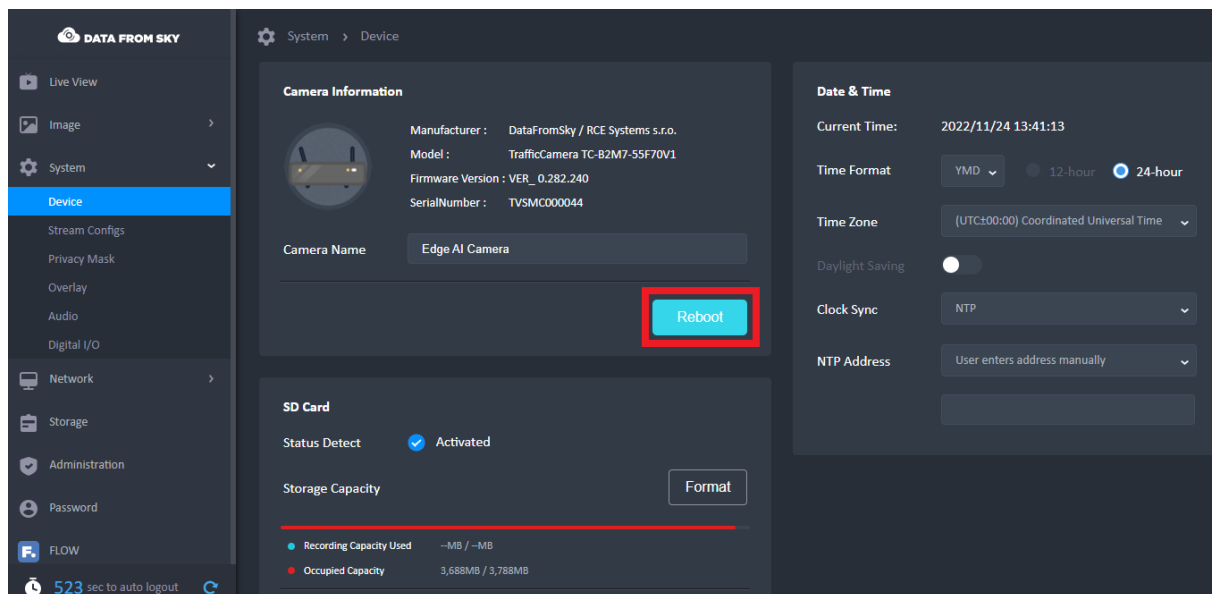
Note that FLOW SW for camera is split into two parts i.e. FLOW Block running on the camera and FLOW Insights running on your PC and you need to connect using the same *major.minor* version of FLOW Insights to FLOW Block.

How to update the camera

Find and download the appropriate version of the update package (the .bin file) for your camera from the [provided website](#) and do the following:

1. Connect to the camera using SFTP (you can for example use WinSCP for this)
 - Port: 22500
 - User: update
 - Password: update.flow1
2. Copy the file into the **home** folder

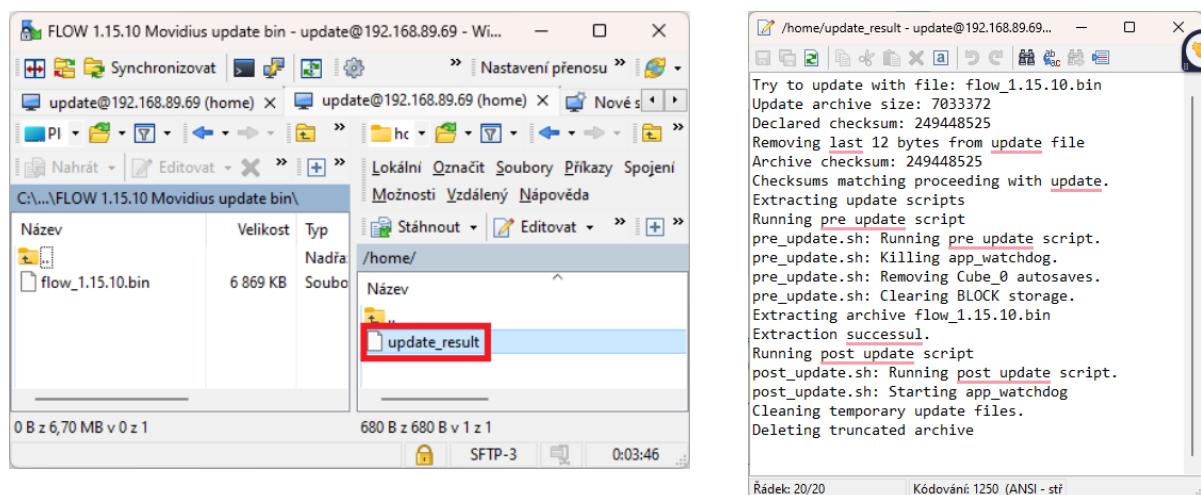




3. Open the web interface and start up the camera and then press the **Reboot** button in the **System** tab on the **Device** page.

After the camera boots up, the system on the camera will be updated. You can verify successful update in two ways:

- A. Connect to the camera again using SFTP and check the content of the **home** folder; in this folder you will see the **update_result** file containing information about the update and the uploaded update package will be automatically deleted after the update is finished



- B. Connect with the appropriate version of **FLOW Insights**. If the **major** or **minor** version does not match, the connection will not be established. You can check the **Hotfix** version in the **Block** tab and in the **Diagnostic** section under the **Version** attribute.

How to update FLOW Insights

Download the version of FLOW demokit that matches the version of the FLOW Block running on the camera. If you download the FLOW Insights installer, follow its installation instructions. If you download the portable version of FLOW Insights, unzip the package and launch the application using the **run.bat** file in the **bin** folder. You can download the latest flow .exe version [here](#) and previous versions on [this link](#).

Quick start guide

This section will guide you through all the necessary steps to get your camera running. This does not include installation on a traffic pole but rather is a guide to help you try and launch the TrafficCamera for the first time before you head out to the field to do so. You can even test the detection by pointing the camera at a screen with a running traffic video like this https://www.youtube.com/watch?v=wqctLW0Hb_0.

Prepare the following:

- TrafficCamera
- Ethernet cable connecting the camera to the desired network (with DHCP server)
- Ethernet cable for connecting the camera to POE enabled slot or an appropriate power cable to connect to the camera with DC 12V or AC 24V to power the camera
- Computer with installed FLOW Insights Windows version. You can download the respective FLOW Insights version here: <https://datafromsky.com/flow-versions/>

First connect your TrafficCamera to the desired network/switch/router, etc... via the Ethernet cable.

If you want to power the camera over the Ethernet cable, the device you connect it to must have POE standards (802.3af or 802.3at). The other option is to use the Power input DC 12V or AC 24V.

Next, to set up our camera, we need to make it accessible from your network adapter. This means that you must configure the adapter to be on the same subnet as the camera. The default camera IP address is **192.168.50.10**.

To configure the camera zoom, focus, colors or network settings, access the camera web interface. Enter the camera address into the browser window and login with the following details that are set as default:

- **login: flowadmin**
- **password: Admin123456789+**

After you have configured the camera based on your needs, you can connect to the camera analytics with FLOW Insights (keep in mind that network configuration changes may prevent your camera from being accessed using the current adapter settings).

Run FLOW Insights application and connect to the camera using its IP address. Log in with the username "**admin**" and password "**admin**" which are set as default and design any sensor you need!

Congratulations – you have successfully connected your very first TrafficCamera. You can now enjoy the power of the acclaimed DataFromSky traffic analytics. For more information on how to work with FLOW, tutorials and support please visit our learning portal here:

<https://intercom.help/datafromsky/en/collections/2019942-datafromsky-flow>

Conclusion

This manual has covered everything you need to know to set up the TrafficCamera (applicable for TrafficCamera models TC-B8M40-110F30 and TC-B2M7-55F70). We went over the contents of the TrafficCamera package, Field installation, Camera framing, Power supply, Waterproofing, Network setup, Camera web interface and Quick start guide.

FLOW has regular updates with new functions, performance improvements and bug fixes. Inside FLOW Insights you will be notified when new FLOW version is available, however please do not update FLOW Insights without updating the FLOW camera application version first.

We hope you will enjoy TrafficCamera. If you have any kind of feedback, please reach out to us at info@datafromsky.com. In case you find any bugs or if you require assistance with the configuration, do not hesitate to contact us at support@datafromsky.com or use the live chat on our www.datafromsky.com webpage.

FAQ

How to change camera date and time?

To change the date and time of the camera you need to use the camera web interface. There you can set the date and time. More about this can be found in the camera web interface section.

How to zoom / focus?

To adjust the zoom, focus and other camera parameters you need to use the camera web interface. There you change the camera settings according to your needs. More about this can be found in the camera web interface section.

How to change IP address of the camera?

To assign a static IP address to the camera you need to use the camera web interface. There you can decide whether to have DHCP server to assign IP address or you can choose a static one. More about this can be found in the camera web interface section.

How to obtain IP address of the camera?

The default camera IP address is 192.168.50.10. If you changed the configuration, you can try to obtain the new IP address by one of the network device scanning utilities. You can use Advanced IP scanner (<https://www.advanced-ip-scanner.com/>) or ONVIF device manager (<https://sourceforge.net/projects/onvifdm/>).

What are the network requirements?

Under the following link you can find all ports and communication protocols that the camera can depending on the FLOW configuration:

https://intercom.help/datafromsky/en/articles/6209963-network-requirements-for-flow-devices-ports#h_483938abe3

Known issues

Here is a list of known issues that are subject to further development and are likely to be fixed in future versions.

Live view in web interface is not working

It may happen very rarely that the live view in the camera web interface is not working and you do not see any images. This defect state affects only a web interface while the RTSP streams as well as the FLOW Insights work as expected. To recover from this state, login to the web interface and reboot the camera.

Autofocusing between near and far objects

In certain situations, such as the camera being located behind the window, we have noticed that the camera repeatedly tries to refocus on near and far objects. To avoid this undesirable behavior, switch to manual focus and configure the camera lens as needed.

Missing HW factory reset

The camera is actually equipped with a HW button to restore the factory settings. The problem is that HW factory reset deactivates the FLOW application due to some changes in the system. The system is designed so that a factory reset should never be necessary. But if you want to do it, contact us for further instructions.

Backup and recovery of camera configuration

This function is not supported in the current version of camera OS (web interface). You can only backup and restore the configuration of FLOW engine using FLOW Insights.

Technical specification

TC-B2M7-55F70V1

Camera – general	
Vision processing unit	Intel® Movidius™ MA2485 VPU
RAM Memory	4Gb 1.1V LP-DDR3/LP-DDR4 SDRAM with 32-bit interface
Power Supply	PoE (IEEE 802.3at)/DC 12V/AC 24V
Image Sensor	1/2.8" progressive scan
Picture Elements	1920 (H) × 1080 (V) 2MP
Minimum Illumination	0.04 Lux @F1.6 (Color), 0.02 Lux @F1.6 (B/W), 0 Lux (IR ON)
HDR/WDR	Super HDR PRO (HDR+WDR)
Regulatory	CE, FCC class A, BSMI
Dimensions	84mm × 77mm × 293.7mm
Weight	~1.6kg
Micro SD	Supporting 1× Micro-SD, SD/SDHC /SDXC UHS-I, 32GB to 256GB, class 10
LED Indicator	3 LEDs: Power, Status, Ethernet

Lens	
Day/Night	Yes
Lens Type	Motorized
Focal Length	5.1-51mm±5%
Auto-iris	f/1.6 ~ f/3.3±10%
Horizontal FOV	7.1°~55.2°±5%
Image Format	16:9
Max. IR Distance (Radius)	70 m

Video capture parameters	
Video Compression	H.265, H.264, MJPEG
Frame Rate	up to 60 fps at 1920 × 1080
Audio Compression	G.711

Network and connectivity	
Interface	10/100 Ethernet
Protocols	TCP, UDP, DHCP, DDNS, HTTP, HTTPS, NTP, RTSP
Ethernet	RJ-45
Audio	Line in/Line out
Digital I/O	1 Input (Dry Contact), 2 Digital Output (Wet Contact)

Storage, startup and operating conditions	
Storage temp.	-30 °C ~ 60 °C (-22 °F ~ 140°F)
Storage humidity	10% ~ 90% (no condensation)
Startup temp.	0 °C ~ 50 °C (-4 °F ~ 122 °F)
Operating temp. (IR off)	-10 °C ~ 60 °C (-14 °F ~ 140 °F)
Operating temp. (IR on)	-20 °C ~ 40 °C (-4 °F ~ 104 °F)
Operating humidity	20% to 55%

Video Analysis Functions

- Detection and tracking of objects
- Category classification into 7 object types
- Detection scale of 320×544 pixels
- Minimum object size required for detection - 32×32 pixels in detection scale

Traffic analytics & visualization functions

- Fully programmable trajectory processing and evaluation thanks to the FLOW framework.
- Speed and stationary time measurement
- Customizable OpenAPI - REST/UDP/JSON format.
- Customizable dashboards with interactive widgets
- Available apps: FLOW Traffic, FLOW Parking, FLOW Retail, FLOW Security

TC-B8M40-110F30V2

Camera – general	
Vision processing unit	Intel® Movidius™ MA2485 VPU
RAM Memory	4Gb
Power Supply	PoE (IEEE 802.3at)/DC 12V/AC 24V
Image Sensor	1/1.8" progressive scan
Picture Elements	3840 (H) × 2160 (V) 8MP
Minimum Illumination	0.09 Lux @F1.5 (Color), 0.03 Lux @F1.5 (B/W), 0 Lux (IR ON)
HDR/WDR	HDR
Regulatory	CE, FCC class A
Dimensions	84mm × 77mm × 293.7mm
Weight	~1.6kg
Micro SD	Supporting 1× Micro-SD, SD/SDHC /SDXC UHS-I, 32GB to 256GB, class 10
LED Indicator	3 LEDs: Power, Status, Ethernet

Lens	
Day/Night	Yes (with removable IR-cut filter)
Lens Type	Motorized
Focal Length	4.46 ~ 11mm±5%
Auto-iris	f/1.5 ~ f/4.3±10%
Horizontal FOV	40.03°~110.9°±5%
Image Format	16:9
Max. IR Distance (Radius)	30m (98.42ft)

Video capture parameters	
Video Compression	H.265, H.264, MJPEG
Frame Rate	Up to 30 fps at 3840 × 2160
Audio Compression	G.711

Network and connectivity	
Interface	10/100 Ethernet
Protocols	TCP, UDP, DHCP, DDNS, HTTP, HTTPS, NTP, RTSP
Ethernet	RJ-45
Audio	Line in/Line out
Digital I/O	1 Input (Dry Contact), 2 Digital Output (Wet Contact)

Storage, startup and operating conditions	
Storage temp.	-30 °C ~ 60 °C (-22 °F ~ 140°F)
Storage humidity	10% ~ 90% (no condensation)
Startup temp.	0 °C ~ 60 °C (32°F~ 140 °F)
Operating temp. (IR off)	-10 °C ~ 60 °C (-14 °F~ 140 °F)
Operating temp. (IR on)	-20 °C~ 40 °C (-4 °F ~ 104 °F)
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