

# ITSCAM 450

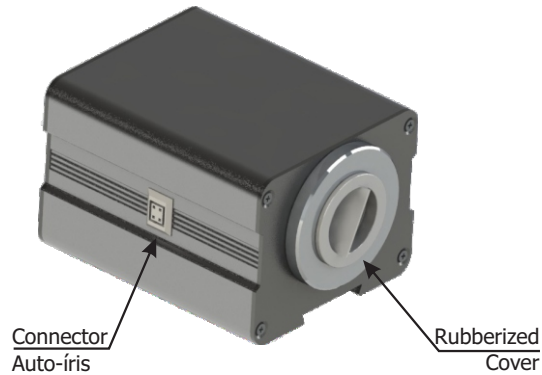
HIGH PROCESSING POWER, CONNECTIVITY, AND EMBEDDED SOFTWARE

# | Installation

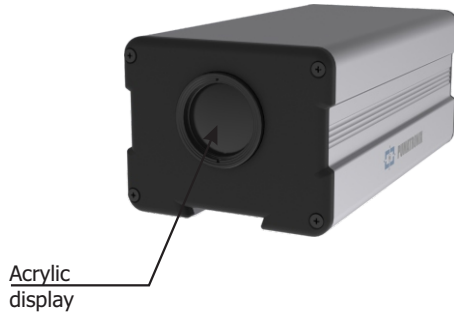


## ITSCAM MODELS 450

### ITSCAM CS MOUNT



### ITSCAM LM

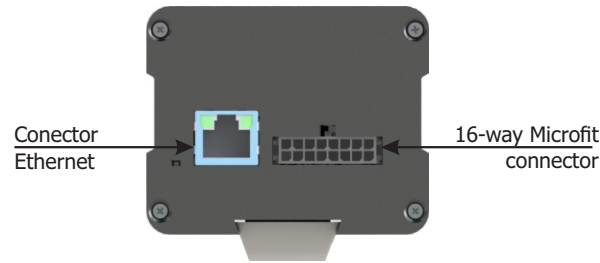


This equipment may be accompanied by lenses, which are sensitive to mechanical impacts such as falls and extreme vibrations.



**Oxidation Risk:** The electrical and signal connections made to the ITSCAM 450 harness and data network cable must be protected in a junction box or similar structure to prevent oxidation of the connections and unwanted infiltration of liquids into the harness.

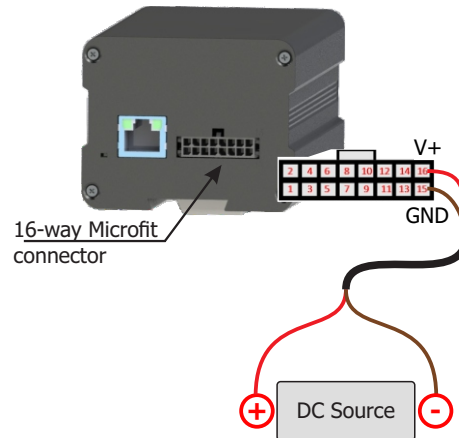
## CONNECTING THE ITSCAM 450



- \* Use the Ethernet connector to connect the ITSCAM 450 to the local network.
- \* Use the Microfit connector inputs to connect the ITSCAM 450 to the power source and signal input equipment for physical triggering, such as an inductive loop or an optical barrier, for instance.
- \* Use the Microfit connector outputs to connect the ITSCAM 450 to an illuminator or equipment you want to control, such as gates or gates.

## POWER CONNECTION

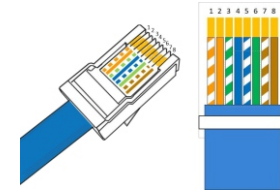
1. Use a 12Vdc or 24Vdc power supply.
2. Make the power connections with the Microfit Connector, at terminals 15 and 16, using the harness provided and considering the respective colors for the V+ and GND signals:



This equipment must be powered by a direct current (DC) source with a voltage of 12 or 24 Vdc. Do not connect any of the inputs directly to the mains (AC)!

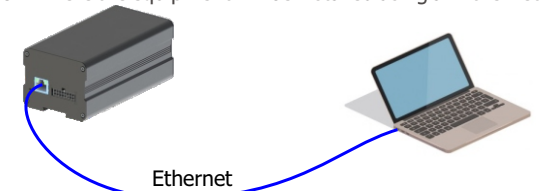
## NETWORK CONNECTION

3. Check the operating indication of the connection through the LEDs of the Ethernet connector, if the device is powered.
4. Check the installation if the LEDs are not indicating that the connection is in operation.
5. Use cable with RJ-45 connector following the T568B standard pinout:



## PARAMETERIZATION OF THE NETWORK INTERFACE

6. Connect the ITSCAM 450 to an auxiliary device disconnected from the local network where the equipment will be installed using an Ethernet cable:



7. Access the ITSCAM 450 interface using a Google Chrome browser (version 85 or higher) with the factory default data:

|          |                      |
|----------|----------------------|
| IP       | <b>192.168.0.254</b> |
| User     | <b>admin</b>         |
| Password | <b>1234</b>          |

8. Access the menu Equipment > Network, in the Ethernet tab.

9. Change the default IP address 192.168.0.254 with a network mask of 255.255.255.0, considering values that do not cause conflicts on the existing network:

| Conflicting values |               |
|--------------------|---------------|
| IP Address         | Network Mask  |
| 192.168.254.x      | 255.255.255.0 |
| 192.168.x.x        | 255.255.0.0   |
| 192.x.x.x          | 255.0.0.0     |
|                    | 0.0.0.0       |



The maintenance IP of ITSCAM 450 (192.168.254.254) is used to restore the connection in extraordinary situations of primary IP loss. For this reason, when manually configuring the network interface (Ethernet) of the equipment, values other than the maintenance IP must be applied.

10. Click Apply to validate the changes and wait for the automatic restart of the equipment.

Aplicar ✓

11. Check the connection and network settings after restarting the ITSCAM 450 device.

12. Disconnect the ITSCAM 450 from the auxiliary device and connect the equipment to the network of the final installation.

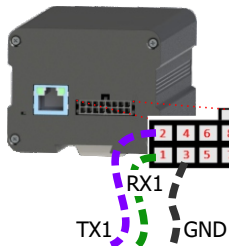
13. Repeat steps 6 to 12 in case of connection loss or IP address conflict.

14. Access with the maintenance IP address 192.168.254.254, in case of any network conflict.

## CONNECTING RS-232 SERIAL INTERFACE

15. Make the connections of the signals from Serial Port 1 at terminals 1 to 3 of the Microfit connector, considering the respective colors and signs detailed in table:

| MICROFIT CONNECTOR |               |
|--------------------|---------------|
| TERMINAL AND COLOR | SIGNAL        |
| 1 Green + White    | RS232_RX1     |
| 2 Purple + White   | RS232_TX1     |
| 3 Black + White    | GND (RS232_1) |
| 4 Purple           | RS232_TX2     |
| 5 White            | RS232_RX2     |
| 6 Brown + White    | GND (RS232_2) |



Connector Terminals  
Microfit 16 way

16. Check the signals of terminals 4, 5 and 6 and the respective colors to connect the interface of Serial Port 2.

## CONNECTING INPUT AND OUTPUT SIGNALS

17. Make signal connections at terminals 7 to 14 of the Microfit Connector, which can be used to receive signals from a loop, optical barrier or to activate illuminators. The respective colors and signs of the terminals are detailed in the table:

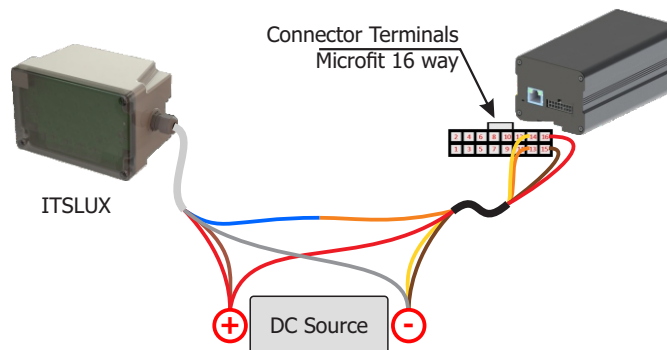
| MICROFIT CONNECTOR |        |
|--------------------|--------|
| TERMINAL AND COLOR | SIGNAL |
| 7 Gray             | IN2+   |
| 8 Black            | IN2-   |
| 9 Red + White      | OUT2+  |
| 10 Blue + White    | OUT2-  |
| 11 Green           | IN1+   |
| 12 Blue            | IN1-   |
| 13 Orange          | OUT1+  |
| 14 Yellow          | OUT1-  |

## CONNECTING ILLUMINATORS



When using an Illuminator in conjunction with ITSCAM 450, check the product specifications for the minimum and maximum distance that must be observed in relation to the position of the object to be illuminated.

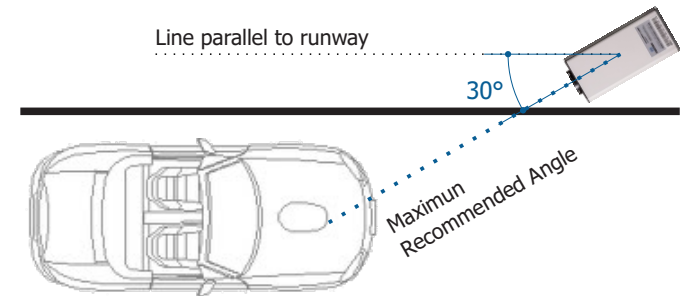
18. Connect the ITSLUX illuminator to the same source used for powering the ITSCAM 450 device, considering the colors of the signals used in the connection:



Refer to the technical information of the luminator device to make the electrical connections correctly.

## POSITIONING OF THE ITSCAM 450 ON THE TRACK

19. Select an existing pole or gantry that allows the ITSCAM 450 to be positioned on the side of the road and parallel to the lane, to capture images of a lane with little horizontal inclination, considering the maximum angle of rotation:



20. Avoid covering up parts of the image by objects such as trees or vehicles from other lanes.

21. Attach the ITSCAM 450 to poles or gantries at a minimum height of 3.5 meters and a maximum of 6 meters (in traffic inspection applications), considering the distance D from the point of passage of the vehicles.

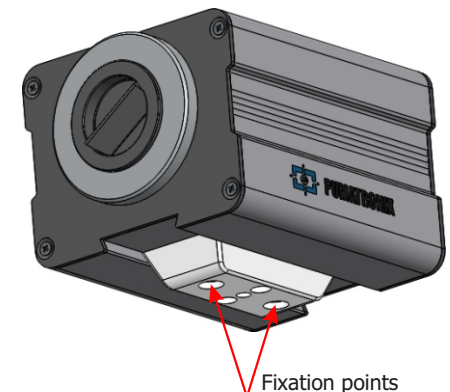


Installation Location: In cases where it is not possible to meet the installation specifications, it is recommended to consult Pumatronix Technical Support.

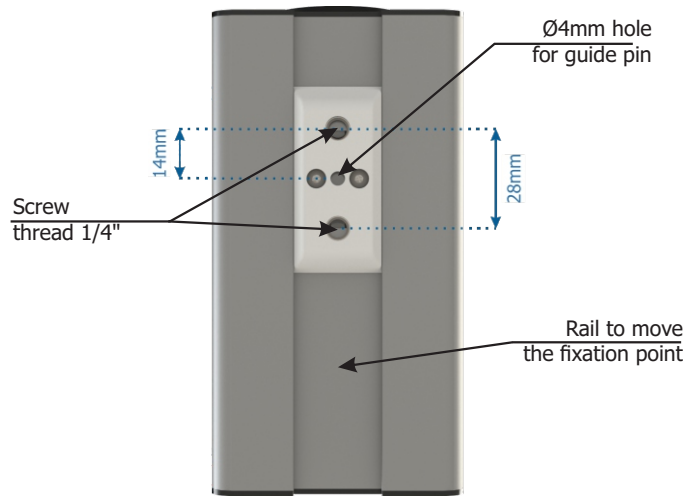
## FIXING THE ITSCAM 450



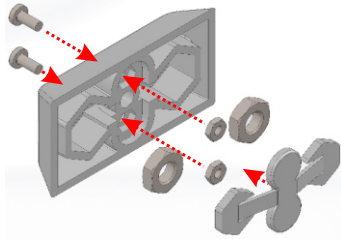
The ITSCAM 450 must be used with a specific Protection Box for outdoor use and with the function of protecting the equipment against the weather.



## CLAMPING MECHANISM SPECIFICATIONS



**22.** Reassemble the fixing mechanism following the sequence indicated in the image, if it detaches from the ITSCAM 450 housing:



## FRAMING ADJUSTMENTS

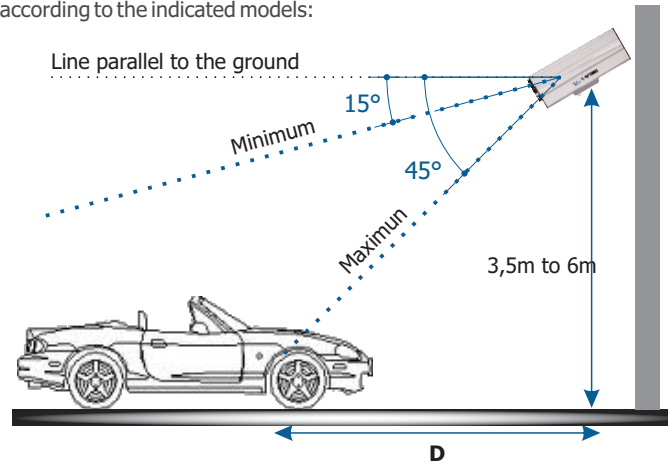
**23.** Connect the ITSCAM 450 device to a power supply (Steps 1 and 2).

**24.** Make the PARAMETERIZATION OF the NETWORK INTERFACE (Steps 6 to 13).

**25.** Disconnect the ITSCAM 450 from the auxiliary device and connect the equipment to the network of the final installation.

**26.** Position the ITSCAM 450 with little horizontal inclination, so that the vehicle plate is aligned with the horizontal in the image, following the steps indicated in POSITIONING the ITSCAM 450 ON the ROAD.

**27.** Tilt the device on the support respecting the minimum vertical angle of 15° and the maximum of 45° between the center of the lens and a line parallel to the ground. Under these conditions, the distance D varies according to the indicated models:



\* D for ITSCAM 450 CS Mount models = variable.

\* D for models with motorized lens:

ITSCAM 450 LM (S09L8AJ) = 8 to 50 meters

ITSCAM 450 LM (S11L10AJ) = 8 to 70 meters



**When using an Illuminator in conjunction with ITSCAM 450, check the product specifications for the minimum and maximum distance that must be observed in relation to the position of the object to be illuminated.**

**28.** Access the web interface of the device with the data registered in the PARAMETRIZATION OF THE NETWORK INTERFACE.

**29.** View the framing through the Live View floating window, which allows Zoom and Focus control when enabling the option. The suggested framing for two lanes in the image is the display of the road ends.



**30.** Use the Autofocus function when the ITSCAM 450 model has motorized lenses or Zoom and Focus adjustment by accessing the Image > Profiles menu on the Lenstab, until the characters become clear in the viewed image.

**31.** Repeat step 27 until you find the best fit of the frame, avoiding significant deformations in the images.

**32.** Disable the automatic Iris and set the value to 100% for a better result during the focus adjustment (if the ITSCAM 450 model presents this functionality) in the Image menu > Profiles Exposure tab.

**33.** Use Live View during Perspective correction and Zoom and Focus.

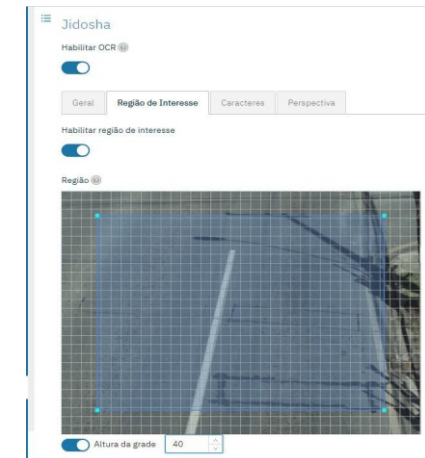


**34.** Adjust the settings of the OCR processing by the device, accessing the menu Equipment > Recognition Jidosha tab:

**34.1.** Consider adjusting the Perspective through the angles of inclination and rotation of the image, (if the inclination of the equipment has reached the limit of 45°, indicated in step 27).

**34.2.** Enable the Region of Interest and drag the vertices of the polygon to delimit the region of the search for vehicle license plates in the image.

**34.3.** Enable the Grid Height view with a value of 25 for the Zoom and Focus fine-tuning. The characters on the boards are at the ideal reading size when they fall at that height.



**35.** Repeat steps 27 to 34 until you can obtain the image of the plate with the best framing and clarity of the characters.



## CARE AND MAINTENANCE

### Perform security measures during the update process:

- \* **Keep the ITSCAM 450 device inactive during the update process, ensuring it is not requested by any service or other equipment on the network where it is installed;**
- \* **Always keep the ITSCAM 450 device on during the execution of the update, and taking the necessary measures to prevent it from being restarted or turned off.**

\* Request the firmware file by filling out the form available in the Technical Support menu on the Pumatronix website.

\* Access in the Product Manual the step-by-step installation of firmware updates, which can be done through the web interface or Pumatronix software.

## WARRANTY TERM

Pumatronix guarantees the product against any defect in material or manufacturing process for a period of 1 year from the date of issuance of the invoice, provided that, at the discretion of its authorized technicians, a defect is found under normal conditions of use.

The replacement of defective parts and execution of services arising from this Warranty will only be carried out in the Authorized Technical Assistance of Pumatronix or a third party expressly indicated by it, where the product must be delivered for repair.

This Warranty will only be valid if the product is accompanied by a Maintenance Form duly completed and without erasures and accompanied by an Invoice.

## SITUATIONS WHERE THE PRODUCT LOSES THE WARRANTY

- 1) Use of software/hardware not compatible with the specifications of the Manual;
- 2) Connection of the product to the mains outside the standards established in the product manual and installations that present excessive voltage variation;
- 3) Infiltration of liquids from the opening/closing of the product;
- 4) Damage caused by natural agents (electric discharge, flood, sea spray, excessive exposure to climatic variations, among other factors) or excessive exposure to heat (beyond the limits established in the Manual);
- 5) Use of the product in environments subject to corrosive gases, with excessive moisture and/or dust;
- 6) Show signs of tampering with security seals;
- 7) Present opening and modification signals made by the Customer in product locations not authorized by Pumatronix;
- 8) Damage caused by accidents/falls/vandalism;
- 9) Display tampered and/or removed serial number;
- 10) Damage arising from the transport and packaging of the product by the Customer under conditions incompatible with it;
- 11) Misuse and in disagreement with the Instruction Manual.

## PRIVACY POLICY

Under the General Data Protection Law (LGPD) - Law No. 13.709, of August 14, 2018, this product has programmable functions for the capture and processing of images that may infringe the LGPD when used, together with other equipment, to capture personal data.

Pumatronix is not responsible for the purposes, use and treatment of the images captured, and the control of the information and forms of operation of the product are the sole decision of the user or purchaser of the product.



| Change History |          |   |
|----------------|----------|---|
| Date           | Revision | Updated content   |
| 30/11/2023     | 1.0      | Initial edition referring to Revision 1.0 of the ITSCAM FF 450 Product Manual |
| 09/01/2024     | 1.1      | Update of estimated range D and Fastening Mechanism                           |
| 17/04/2025     | 1.2      | Update of estimated range D   |

\* **For more information access the product manual at [www.pumatronix.com.br](http://www.pumatronix.com.br).**

### TECHNICAL SUPPORT

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### Movement in Focus.

