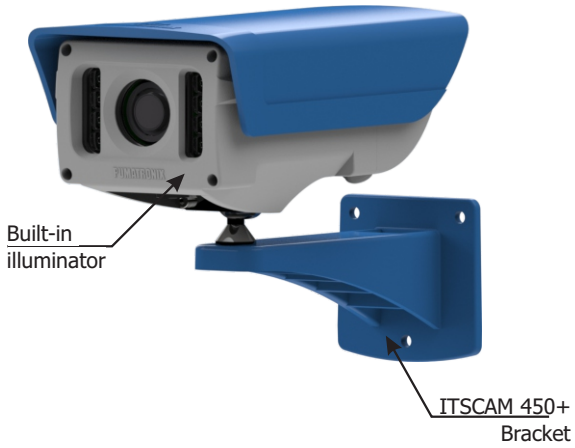
PUMATRONIX

ITSCAM 450+

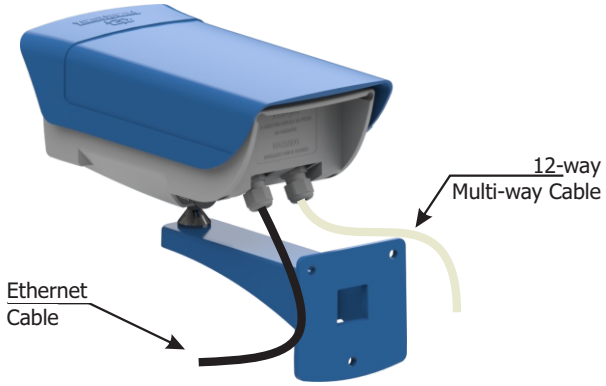
IDEAL FOR SHOTS REQUIRING INTEGRATED LIGHTING

Installation

ITSCAM 450+ MODEL



This equipment has a set of lenses that is sensitive to mechanical impacts such as drops and severe external vibrations.



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

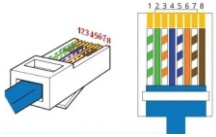
* Use the Ethernet cable to connect the ITSCAM 450+ to the local network and optionally to power the device.

* Use the *12-way multi-way cable* inputs to connect the ITSCAM 450+ to the power source and to signal input equipment for physical triggering, such as an inductive loop or an optical barrier, for example.

* Use the output of the *12-way multi-way cable* (orange and yellow), to connect the ITSCAM 450+ to an illuminator or to equipment that needs to be controled, such as barriers or gates.

NETWORK CONNECTION

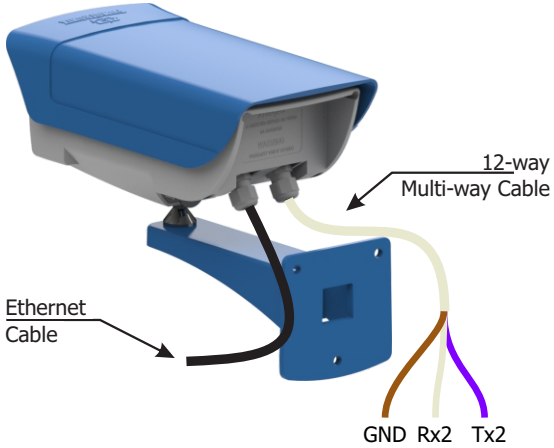
1. Use the Ethernet cable for the network connection, with an RJ-45 connector following the ANSI/TIA-568A standard pinout.



CONNECTING RS-232 SERIAL INTERFACE

2. Make the connections of the *Serial Port* signals in the *Violet* and *White* color ways of the *12-way multi-way cable*, considering the signals detailed in the table:

MULTI-WAY CABLE	
TERMINAL E COR	**SINAL**
4 Violet	RS232_TX2
5 White	RS232_RX2



CONNECTING INPUT AND OUTPUT SIGNALS

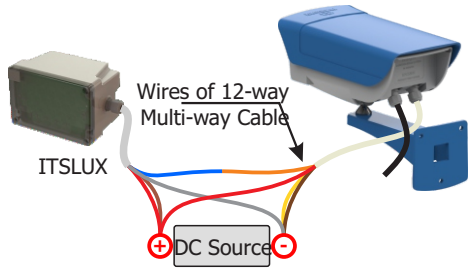
3. Make the signal connections on ways numbered 3, 4, 9, and 10 of the *12-way multi-way cable*, which can be used to receive signals from a loop, or optical barrier, or on ways numbered 11 and 12 for activating illuminators. The respective colors and signs are detailed in the table:

WAYS OF MULTI-WAY CABLE	
WAY COLOR	**SINAL**
1 Red	12Vdc or 24Vdc power supply
2 Brown	Negative (GND)
3 Green	Input 1 + (IN 1+)
4 Blue	Input 1 - (IN 1-)
5 Violet	TX RS232 2
6 White	RX RS232 2
7 Blue + white	Not Connect
8 Red + white	Not Connect
9 Grey	Input 2 + (IN 2+)
10 Black	Input 2 - (IN 2-)
11 Orange	Output 1 + (IN 1+)
12 Yellow	Output 1 - (IN 1-)

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.

4. Connect the ITSLUX illuminator to the same source used to power the ITSCAM 450+ device, considering the colors of the signals used in the connection:

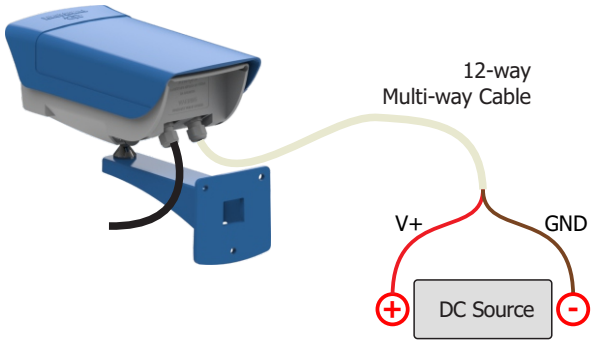


Consult the technical information of the illuminator device to make the electrical connections correctly.

12Vdc or 24Vdc POWER SUPPLY CONNECTION

5. Use a 12Vdc or 24Vdc power supply.*

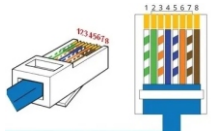
6. Make the power connections using the 12-core shielded cable, considering the colors corresponding to the V+ and GND signals:



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)!

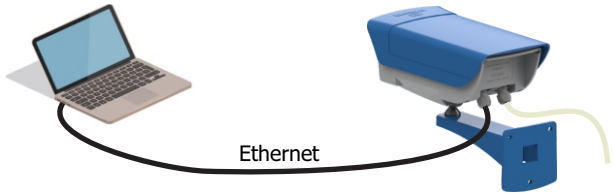
POE POWER CONNECTION

7. Use the Ethernet cable for PoE power, with an RJ-45 connector, following the ANSI/TIA-568A standard pinout:



NETWORK INTERFACE PARAMETERIZATION

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



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

IP	**192.168.0.254**
User	**admin**
Password	**1234**

10. Access the menu *Settings* > *Network.*

11. Modify the default IP address 192.168.0.254 with netmask 255.255.255.0, considering values different from those that cause conflicts in the existing network:

Values that cause conflict	
IP adress	**Net 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 ITSCAM 450+ maintenance IP (192.168.254.254) is used to recover the connection in situations where the primary IP is not known.
For this reason, when manually configuring the network interface (Ethernet) of the equipment, diferent values from maintenance IP must be applied.

12. Click *Apply* to validate the changes and wait for the device to automatically restart.

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

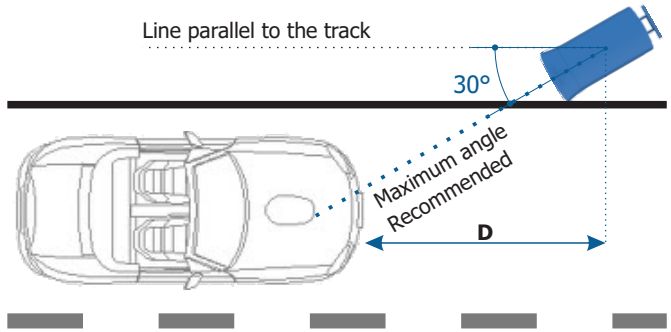
14. Disconnect ITSCAM 450+ from the auxiliary device and connect the equipment to the final installation network.

15. Repeat steps 8 to 14 in case of lost connection or IP address conflict.

16. Log in with the maintenance IP address 192.168.254.254 in case any network conflicts occur.

POSITIONING OF ITSCAM 450+ AT THE ROAD

17. Select an existing pole or gantry that allows positioning the ITSCAM 450+ on the side of the road, parallel to the track and with little horizontal inclination, with the objective of capturing images of a track lane, considering the maximum angle of rotation:



***D** variable for the models specified in the Product Manual.

18. Avoid covering parts of the image with objects such as trees or vehicles from other lanes.

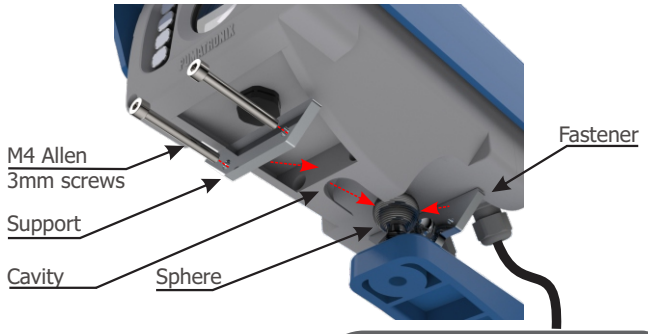
19. Fix the ITSCAM 450+ on poles or gantries at a miminum height of 1.5 meters, considering the distance **D** from the vehicles' crossing point (Step 29).

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

FIXING ITSCAM 450+ TO THE 450+ BRACKET

20. Fit the ITSCAM 450+ cavity in the sphere of *450+ Bracket*.

21. Position the *Support* with M4 Allen 3mm screws on the front and the *Fastener* on the back of the cavity.

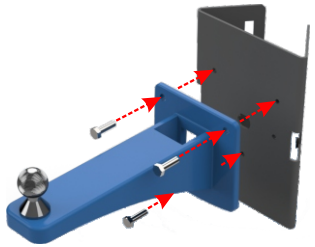


22. Secure the ITSCAM 450+ to the bracket by tightening the screws. Suggestion: use a wrench longer than 10cm and in "T" shape.

Be careful with the force applied to the screws so as not to damage the ITSCAM 450+ housing.

23. Fix the ITSCAM 450+ and *450+ Bracket* set to a pole or gantry, with the aid of an auxiliary Cell Bracket, when the pole structure has a circular section.

24. Use 3 screws of 3/16" diameter to secure the *450+ Bracket* to an auxiliary Cell Bracket.



FRAMING ADJUSTMENTS

25. Connect the ITSCAM 450+ device to a power source (Steps 5 and 6 or 7).

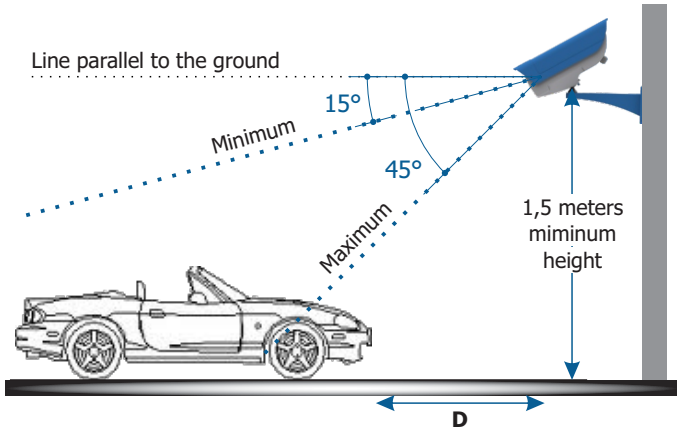
26. Carry out the *NETWORK INTERFACE PARAMETERIZATION* (Steps 8 to 15).

27. Disconnect the ITSCAM 450+ from the auxiliary device and connect to the final installation network.

28. Position ITSCAM 450+ with little horizontal inclination so that the vehicle plate is aligned with the horizontal in the image and follow the steps indicated in *POSITIONING THE ITSCAM 450+ AT THE ROAD.*

29. Tilt the device onto the stand, respecting the minimum vertical angle of 15° and the maximum of 45° between the lens center and a line parallel to the ground. Under these conditions, the distance **D** varies according to the applied model.

When using an Illuminator in conjunction with the 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.



***D** variable for the models specified in the Product Manual.

30. Access the device's web interface with the data registered in the *NETWORK INTERFACE PARAMETERIZATION*.

31. Adjust initial Zoom and Focus through the Live Image Preview window, selecting the Zoom and Focus control on the gear icon (the suggested framing for two lanes in the image is to display the ends of the lane):

32. Access the image adjustment options available in the Image > Profiles menu, clicking on the Edit option corresponding to the active profile (preferably Daytime).

33. Disable Automatic Iris to obtain better results during the image configuration process, accessing the Exposure tab.

34. Adjust Zoom and Focus until the characters become clear in the image viewed through the Preview window, accessing the Lens tab.

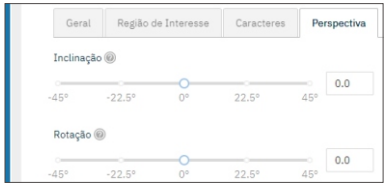
35. Adjust Zoom and Focus using the Autofocus function or manually, either by scrolling the scroll bar or using the buttons with partial adjustment values:

36. Repeat step 27 until you find the best framing adjustment, avoiding significant deformations in the images.

37. Tilt the support with the equipment until the best framing adjustment, respecting the maximum limit angle of 45° for vertical tilt in order to avoid significant deformations in the images.

38. Extend the Sliding Flap to the necessary position to prevent light from reflecting on the lens.

39. Consider adjusting the Perspective in order to correct the angles of the plate in the image (if the tilt of the equipment with the support has reached the limit of 45º, illustrated in step 29).

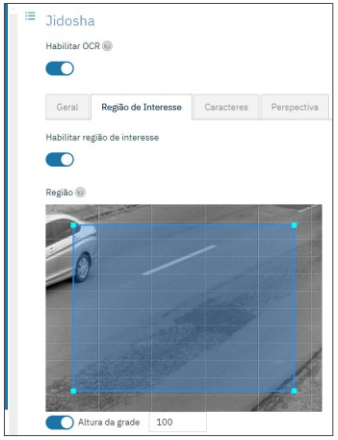


40. Adjust the device's OCR processing settings by accessing the Equipment menu > Recognition tab Jidosha in the interface.

41. Consider the parameters indicated in the Integration Manual for the best OCR Recognition.

42. Fine-tune the framing by accessing the Region of Interest tab.

43. Click on Enable Region of interest and on the image indicate the region in which the system should search for vehicle license plates, clicking to create the 4 points of the polygon:



44. Select the Grid Height view (in pixels), indicating a value corresponding to a license plate viewed in the OCR reading region.

45. Repeat steps 29 to 40 until you obtain the image of the plate with the best framing and sharpness of the characters.

FIRMWARE UPDATE

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.

POLÍTICA DE PRIVACIDADE

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.

The equipment does not collect, use or store personal information, whether sensitive or not, for its operation.

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.

INDÚSTRIA BRASILEIRA DE TECNOLOGIA

Change History		
Date	**Revision**	**Update Content**
05/22/2024	1.0	Initial Edition
08/29/2024	1.1	Update login details
03/17/2025	1.1.1	Nomenclature update (SAD-673)

*** For more information access the product manual at www.pumatronix.com.br**

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Movimento em Foco.