

ITSCAM FF 600

HIGH POWER ON IMAGE PROCESSING

| Installation



ITSCAM FF 600 MODEL



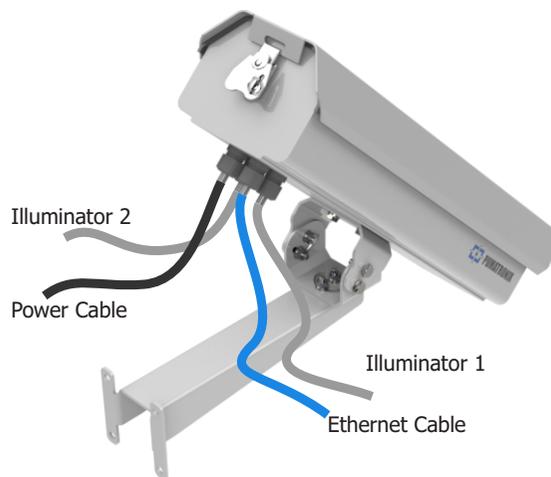
A ITSCAM FF 600 é acompanhada de lentes, que são sensíveis a impactos mecânicos como quedas e vibrações extremas.



Risco de Oxidação: As conexões elétricas e de sinal realizadas no chicote da ITSCAM FF 600 e no cabo de rede de dados devem ser protegidas em caixa de passagem ou estrutura semelhante para evitar a oxidação das ligações e infiltração indesejada de líquidos no chicote.

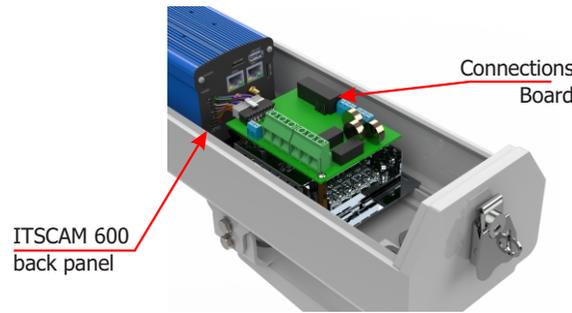
CONNECTING ITSCAM FF 600

1. Pass the connection cables through the PG9 cable glands, considering the preferred usage of each one:



2. Tighten the cable gland until the cable is completely fixed.

3. Go to the available interfaces on the *Connections Board* or on the back panel of the ITSCAM 600 device to connect the cables:



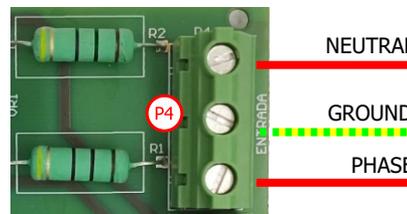
4. Use the connectors available on the back panel of the ITSCAM 600 device:



The SD card must always be plugged in for the correct functioning of ITSCAMPRO Móvel plugin.

POWER CONNECTION

5. Perform power connections to the *Connections Board*, considering the P4 connector interfaces and their respective colors:



* Colors according to NBR 5410 and user can provide 110 VAC or 220 VAC installation.



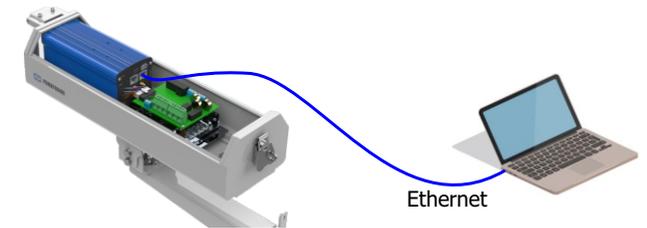
Grounding is required at the installation site.



Electric shock: Handle the ITSCAM FF 600 with care, as it operates on 127 or 220Volts (AC) and when installing the external power supply conductor on the product's Connection Board, it must always be done with the power switched off to prevent the risk of shock.

NETWORK INTERFACE PARAMETERIZATION

6. Connect the ITSCAM FF 600 to an auxiliary device disconnected from the local network in which the equipment will be installed, using an Ethernet cable connected to the ITSCAM 600 device:



7. Access the ITSCAM FF 600 interface using a Google Chrome browser (from version 85 or higher) with the default factory data:

IP	192.168.0.254
Username	admin
Password	1234

8. Go to the menu *Equipment > Network* on the *Ethernet* tab.

9. Enter the *Primary Interface (ETH-1)* data, changing the default values of IP address 192.168.0.254 and subnet mask 255.255.255.0 to values other than those that might cause conflict on the existing network:

Values that cause conflict	
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 the ITSCAM FF 600 (192.168.254.254) is used to recover the connection in extraordinary situations of loss of the primary IP. For this reason, when manually configuring the equipment network interface (Ethernet or Wi-Fi), different values from the maintenance IP must be applied.

10. Confirm the changes by clicking on the *Apply* button at the top of the page:



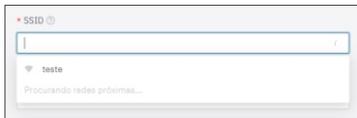
- 11. Wait for the device to restart automatically.
- 12. Check the connection and network settings after the restart of ITSCAM FF 600 device.
- 13. Disconnect the ITSCAM FF 600 from the auxiliary device and connect the equipment to the network of the final installation.
- 14. Repeat steps 6 to 12 if there is a connection loss or IP address conflict.
- 15. Log on with the maintenance IP address 192.168.254.254, just in case of any network conflicts.

WI-FI NETWORK CONFIGURATION (IoT DEVICES)



The Wi-Fi, 4G and 3G network interfaces are disabled in the equipment's factory default settings.

- 16. Access the device's web interface with data recorded in the *NETWORK INTERFACE PARAMETERIZATION*.
- 17. Go to menu *Equipment > Network* at *Wi-Fi* tab.
- 18. Choose the *Station (STA)* Operation Mode for connecting to an existing Wi-Fi network.
- 19. Click on the *SSID* field and the nearby Wi-Fi networks available for connection are listed for selection.



- 20. Select the *Authentication Protocol* a ser utilizado: *Open (sem autenticação), WPA, WPA2, WPA & WPA2*.
- 21. Enter the password to access the selected Wi-Fi network.
- 22. Click on the *Apply* button at the top of the page when validating the entered data.

3G OR 4G MOBILE NETWORK SETUP



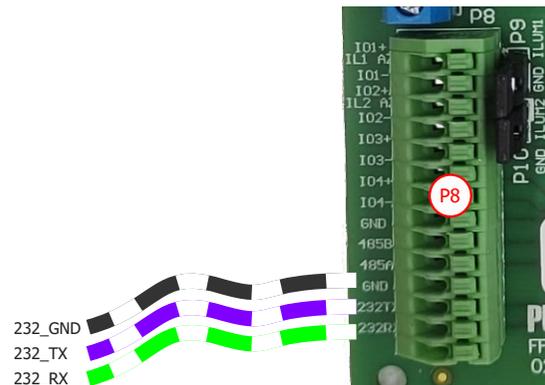
The Wi-Fi, 4G and 3G network interfaces are disabled in the equipment's factory default settings.

- 23. Access the device's web interface with data recorded in the *NETWORK INTERFACE PARAMETERIZATION*.
 - 24. Go to menu *Equipment > Network* on the *Mobile* tab.
 - 25. Click on *Enabled* and the configuration fields will be displayed.
- * **Enter the customized data whenever is necessary to configure the operator information. By default the information are:**
 a. APN: `http://[operator name].com.br;`
 b. User: `[operator name];`
 c. Password: `[operator name];`
 *For operators with personalized *APN, User and Password*, the fields must be filled in for the 3G or 4G connection to work.

26. Click on *Apply* to save the network settings.

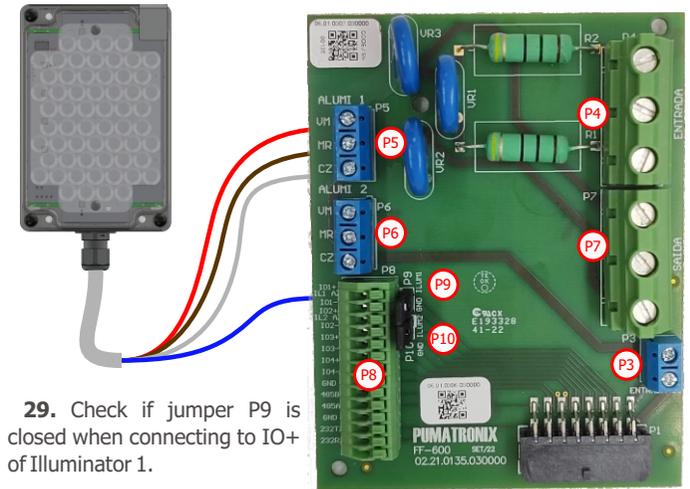
CONNECTING RS-232 SERIAL INTERFACE

27. Make the RS-232 data connections with the *Connections Board* considering the P8 connector interface and the respective colors:



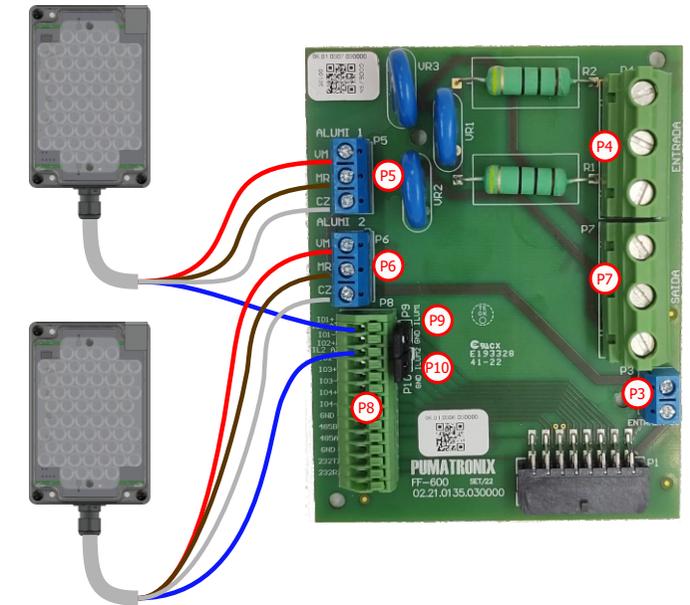
ITSLUX ELECTRICAL CONNECTIONS

28. Connect the cable wires of 1 ITSLUX to the P5 and P8 connectors, following the colors indicated on the *Connections Board*:



29. Check if jumper P9 is closed when connecting to IO+ of Illuminator 1.

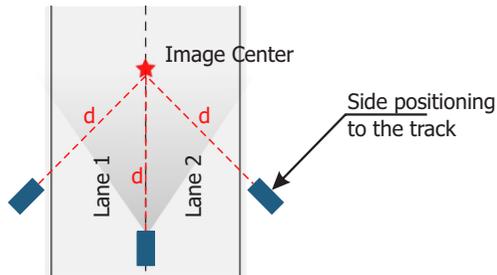
30. Connect the wires of the 2 ITSLUX cables to the P5, P6 and P8 connectors, following the colors indicated on the *Connections Board*:



31. Check if jumper P9 and P10 are closed when connecting to IO+ of Illuminators 1 and 2.

POSITIONING ITSCAM FF 600 AT VIA

32. Select an existing pole or gantry that allows positioning the ITSCAM FF 600 preferably centered on the track, with the objective of capturing images of up to three lanes of the track, considering the linear distance between the equipment and the image center:



When using an Illuminator in conjunction with ITSCAM FF 600, check in the product specifications which minimum and maximum distance must be observed in relation to the position of the object to be illuminated.

33. Fix the ITSCAM FF 600 taking into account the minimum height limits specified for the site. The linear distance D from the vehicles crossing point varies according to the estimated range of the lens model. See the Product Manual for more information.

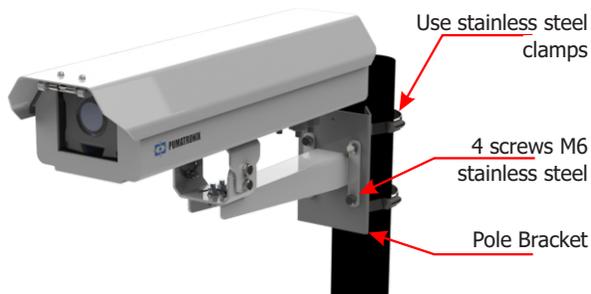


Installation location: In cases where it is not possible to meet the installation specifications, it is recommended that you consult Pumatronix Technical Support.

FASTENING OF ITSCAM FF 600 ON POLE

34. Perform the fixing of the ITSCAM FF 600, with cables passed and attached to the cable glands, on the *Pole Bracket* using the 4 screws M6 x 25.

35. Provide stainless steel clamps with enough length and appropriate to the diameter of the installation pole.



36. Place the ITSCAM FF 600 + *Pole Bracket* assembly over the via, respecting the minimum height limits specified for the site and the minimum and maximum distances indicated in *POSITIONING ITSCAM FF 600 AT VIA*.

37. Avoid blocking out parts of the image by objects such as trees or vehicles from other tracks.

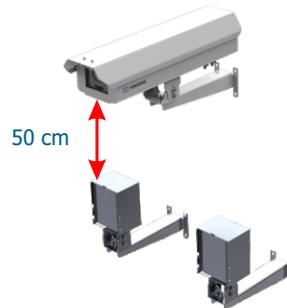
38. Install the ITSCAM FF 600 at a slight angle, so that the license plate appears in the image aligned with the horizontal plane.

ITSLUX POSITIONING



When using an Illuminator in conjunction with ITSCAM FF 600, check in the product specifications which minimum and maximum distance must be observed in relation to the position of the object to be illuminated.

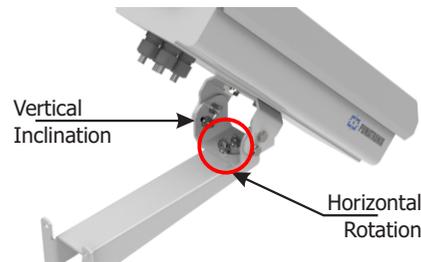
39. Fasten 1 or 2 illuminators optionally to the same pole and just below the ITSCAM FF 600 device, keeping the minimum distance of 50 centimeters.



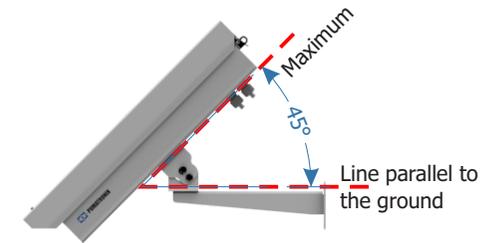
The ITSLUX I3090 model can be installed with a minimum distance of 30 cm and should be used for distances greater than 2 meters and less than 7 meters.

FRAMING ADJUSTMENTS

40. Move the equipment base articulation for vertical tilt or horizontal rotation, loosening the respective screws:



41. Tilt the equipment on the base until the best framing fit, considering the maximum angle limit of **45°** for vertical tilt. Greater angles of vertical inclination generate significant deformations in the generated images.

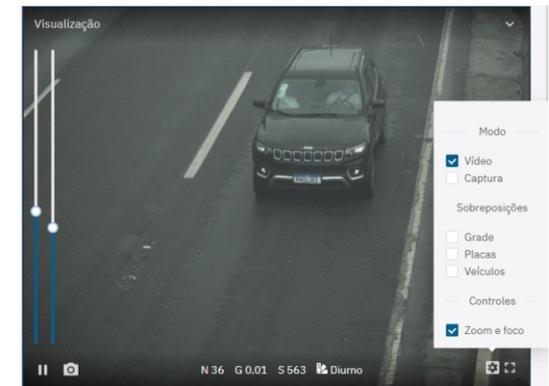


42. Disconnect the ITSCAM FF 600 from the auxiliary device and connect to the final installation network.

43. Access the device's web interface with data recorded in the *NETWORK INTERFACE PARAMETERIZATION*.

44. Deactivate the *Automatic Iris* for a better result (if your ITSCAM 600 model has this feature) in the menu *Image > Profiles* tab *Exposure*.

45. View the frame through the *Live View* floating window, which allows to control *Zoom* and *Focus* in the scroll bars on the left when you enable the option:



46. Use the *Autofocus* function when the ITSCAM 600 model has motorized lenses or adjust *Zoom* and *Focus* by accessing the *Image > Profiles* menu on the *Lens* tab, until the characters become clear in the displayed image.

47. Adjust the desired zoom and focus position, until the license plate is readable and in capture condition (height approximately 20 pixels).

48. Consider adjusting the *Perspective* by tilting and rotating the image by accessing *Equipment > Recognition* on the *Jidosha* tab, if the inclination of the equipment with the bracket has reached the 45° limit, as indicated.

49. Adjust the device's OCR processing settings by accessing the menu *Equipment > Recognition* tab *Jidosha* .

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

51. Activate the *Grid Height* view with a value of 25 to fine-tune *Zoom* and *Focus*. The characters on the plates are at the ideal reading size when they are at this height.



52. Repeat steps 40 to 51 until the image of the plate is obtained with optimal framing and character clarity.

FIRMWARE UPGRADING

Follow the security measures during the upgrade process:

* **Keep the ITSCAM FF 600 device inactivated during the upgrade process, guaranteeing that it is not requested by any service or other equipment on network in which it is installed;**

* **Keep the ITSCAM FF 600 device powered on at all times during the upgrade process, making sure to take the necessary steps to prevent it from being restarted or switched off.**

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

* Access in the Product Manual the step-by-step installation of firmware updates and of the ITSCAMPRO Móvel plugin.

WARRANTY TERM

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

The replacement of defective parts and the execution of services resulting from this warranty will only be carried out at the Pumatronix Authorized Technical Assistance 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 the Maintenance Form duly filled out and without erasures and followed by the Invoice.

SITUATIONS WHERE PRODUCT LOSES WARRANTY

- 1) Usage of software/hardware not compatible with the specifications in the Manual;
- 2) Connecting the product to the power grid outside the standards established in the product manual and installations that present excessive voltage variation;
- 3) Liquid infiltration resulting from the product opening/closing;
- 4) Natural damage (electric discharge, flood, sea fog, excessive exposure to climate variations, among other factors) or excessive exposure to heat (beyond the limits established in the manual);
- 5) Usage of the product in environments that are susceptible to corrosive gases, excessive humidity and/or dust;
- 6) To present signs of security seals tampering;
- 7) Show signs of opening and modification made by the customer in parts of the product not authorized by Pumatronix;
- 8) Damage caused by accidents/falls/vandalism;
- 9) To present adulterated and/or removed serial number;
- 10) Damages resulting from transportation and packaging of the product by the customer in conditions incompatible with it;
- 11) Misuse and in disagreement with the Instruction Manual.

PRIVACY POLICY

In compliance with the General Law on Data Protection (LGPD) - Law No. 13,709, of August 14, 2018, this product has programmable functions for capturing and processing images that may infringe the LGPD when used, in conjunction 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 acquirer of the product. is the sole decision of the user or acquirer of the product.



Change History		
Date	Revision	Content Update
02/05/2022	1.0	Initial edition regarding Revision 1.0 of the ITSCAM FF 600 Product Manual
27/01/2023	1.1	Connection Board model update
22/12/2023	1.2	Cover update
21/06/2024	2.0	Reordering of installation steps; Model update
13/08/2025	2.1	Display material correction (SAD-917)
03/09/2026	2.1.1	Inclusion of the I3090 illuminator model specification (SAD-1053)

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

TECHNICAL SUPPORT

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Movement in Focus.

