FAAC

ReaderPlate VGA

Installing and positioning rapid guide
READERPLATE VGA (640x480)

12 september 2005

This rapid guide supplies the instructions for:

- ↳ Working specs of camera READERPLATE VGA 640x480
- ↳ Proper identification of working system conditions READERPLATE VGA
- ↳ Proper physical installation and guideline of READERPLATE VGA

Needed equipment's for READERPLATE unit installation

For proper installation of the unit, it is needed to have the following tools :

- ↳ **Unit READERPLATE VGA 640x480**
- ↳ **Notebook or other transportable PC the following programs** :
  - o Internet Explorer Browser navigator
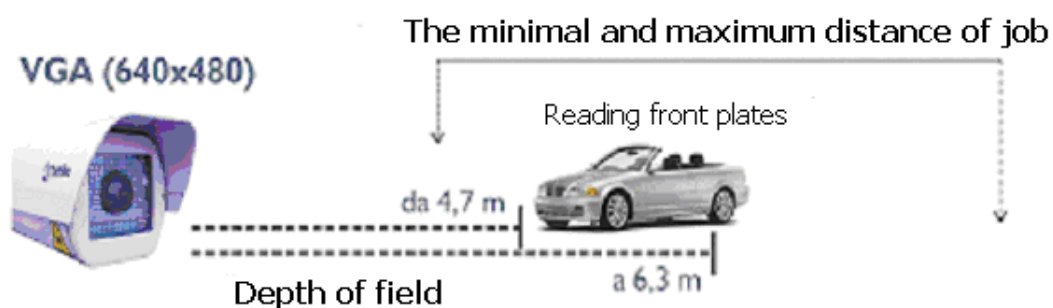 - o Reader Plate Setup Software

As alternative to the previous tools, the program named

  - o **Ethernet cable net** intercrossed for the direct connection between Notebook and READERPLATE (also named crossed cable).
  - o As furhter alternative, you can use a standard Ethernet cable with adapter that simulate the cable couples crossing or a switch with standard Ethernet cables.
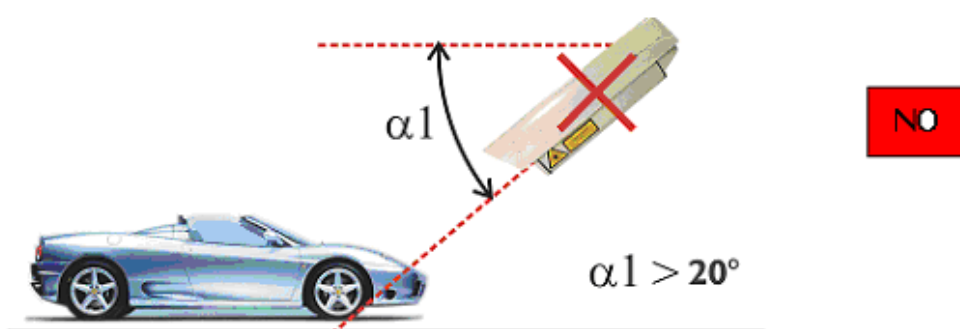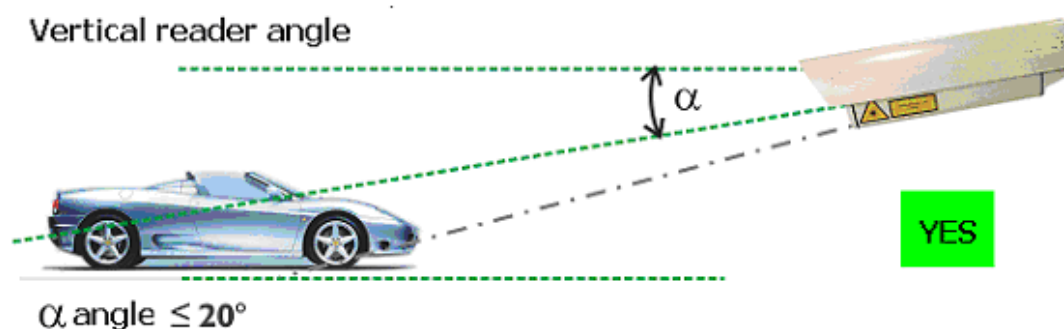- ↳ **meter, in tape of plastic** (length 10 meters)
- ↳ **tool keys for camera support implantation .**
- ↳ **street cone or other reference object** to target and tracking during the installation of the camera
- ↳ **Spray paint** with white paint or yellow in order to mark the road centre, the working area of camera and reference points. This represents all marked points even if camera is moved from the original positioning.
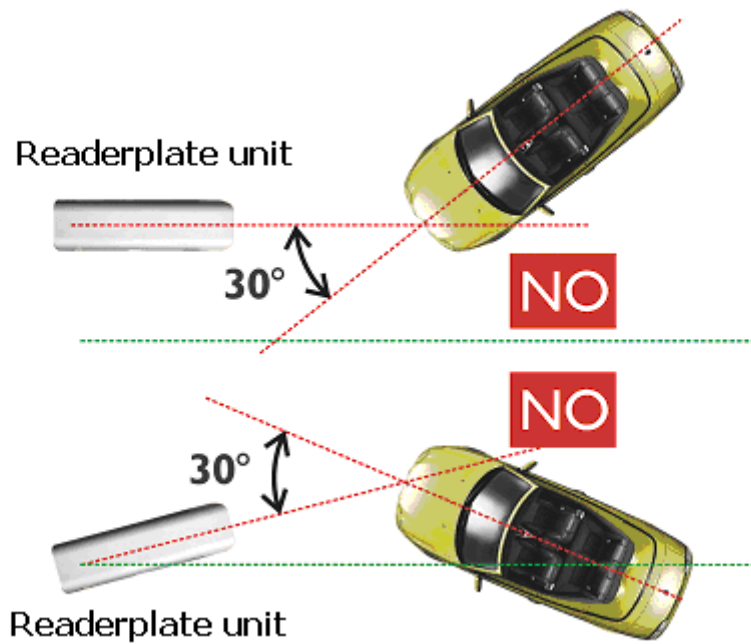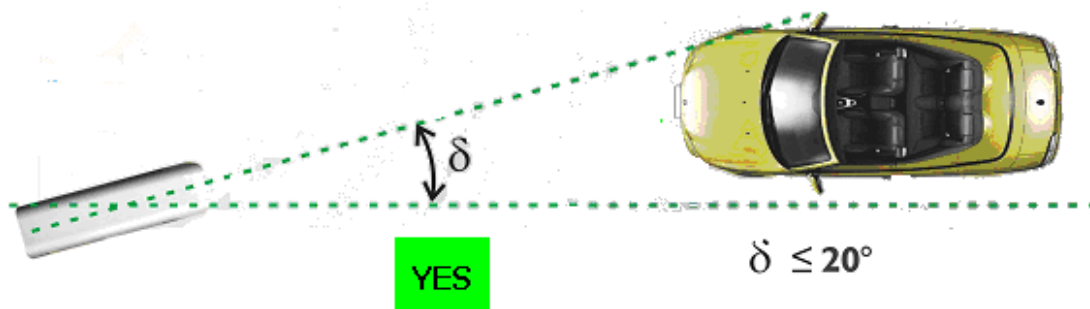
Allowed plate reading distances for ReaderPlate VGA 640x480

VGA (640x480)

The minimal and maximum distance of job

Reading front plates

da 4,7 m

a 6,3 m

Depth of field

Vertical reading angle

Vertical reader angle

α

α angle $\leq 20°$

YES

$\alpha 1$

$\alpha 1 > 20°$

NO

Horizontal reading angle

YES

$\delta \leq 20°$

Readerplate unit

30°

NO

NO

30°

Readerplate unit

Operating sequence

For the proper functionality of the READERPLATE VGA system, it is needed to execute the following 4 major points:

1. Access mode to gate
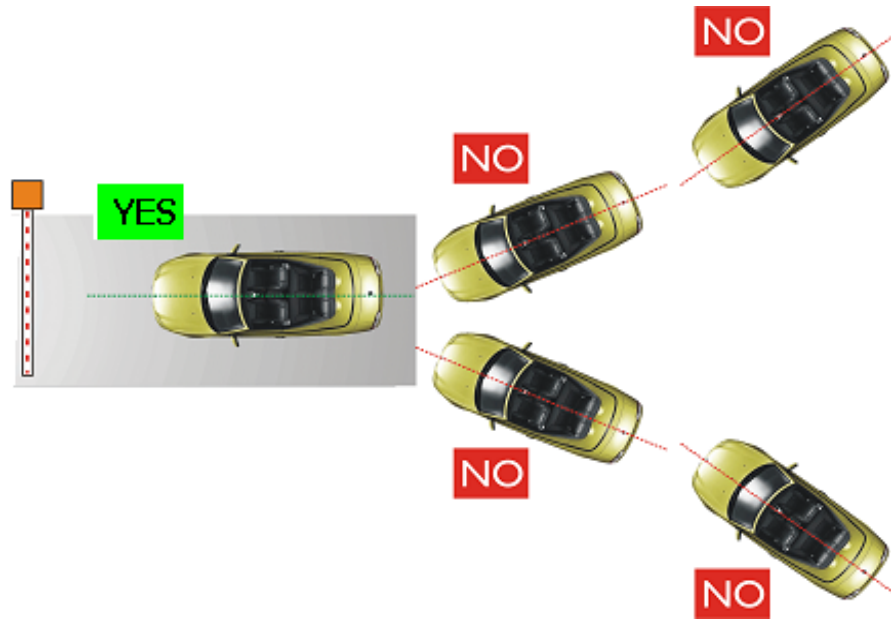
The scope is to identify the exact point in which the front plates are in perpendicular position to the axis of the road centre (see above picture).

2. Pole and camera support point positioning

The READERPLATE pole, on which unit will come installed, must be placed to a distance of 4,5 meters from the line in which the vehicle must wait for identification and gate opening (see picture below).


Remark : The pole must properly fixed to the ground in perfect vertical position.

In order to enlarge the lane, for big vehicles (bus, trucks, etc.), it is allowed to install the pole, 50 centimetres in the side of the road width in accordance to the picture below.

Important remark : It is essential to previously evaluate the vehicles type that are going to pass there.This is in order to adapt camera positioning according to the most vehicle size.

2.1 Here find the right position with pole of 0,5 meters out of the lane width.
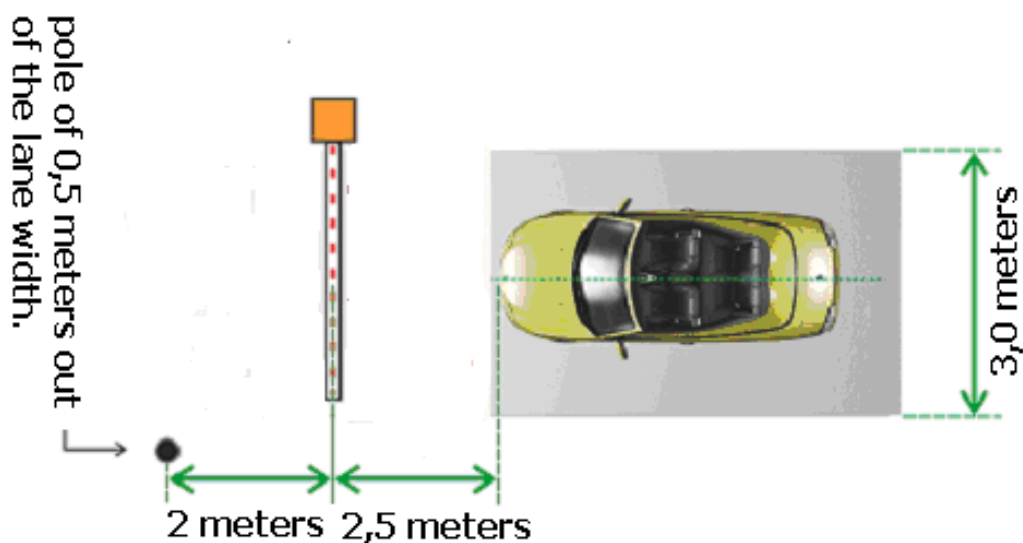
3.READERPLATE VGA fixing stirrup to support pole

the stirrup must be installed to a height of 2 meters from the ground (sees image attached).

The stirrup must be secured to pole. To secure the stirrup on the pole, it can be used the collar from pole (optional accessory) showed below.

stirrup

2 meters from the ground
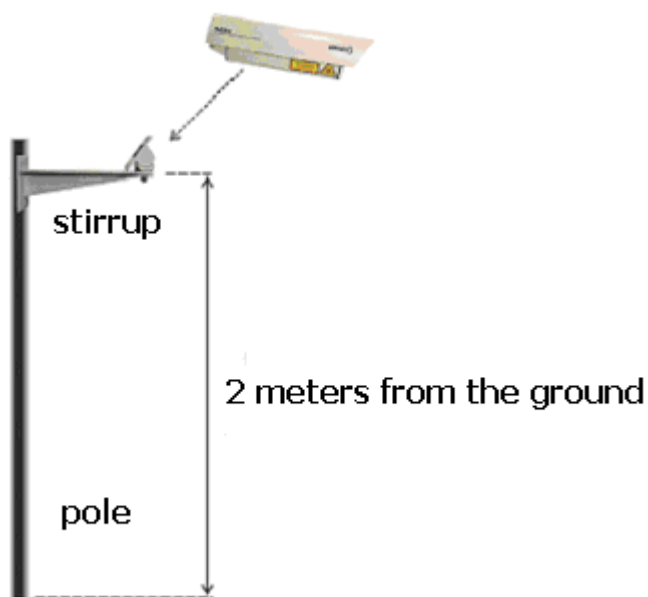
pole

Sight of the collar(optional) to be installed on the pole; pole diameter from 65mm to mm110 max.

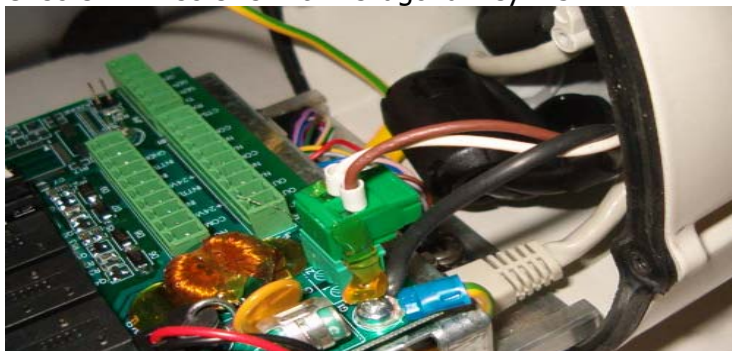## 4. How to replace power supply 24Vdc cable and net cable

This replacement is needed when wiring distances are longer than 5mt since this is the length of original cables.
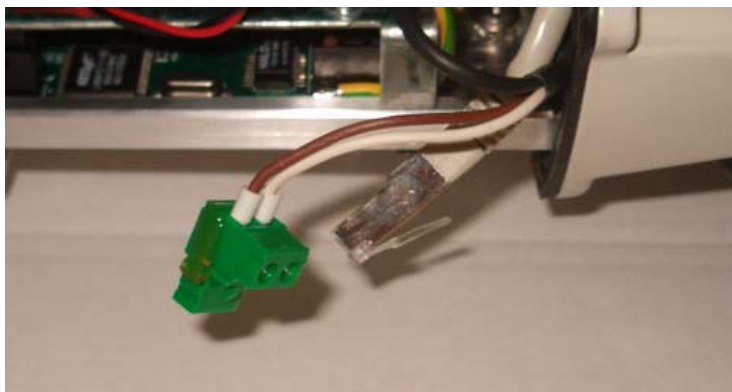

Take over the protection case up to middle camera body.

Unscrew n.2 screws with hexagonal key n.3.

Take out the rear of camera, cables are visible from a camera side

Take out both original wires, by disconnecting the power cable, screen and net cable.
Then replace them with compatible longer cables.
To reassemble the unit, follow the inverse procedure.

5. Guideline of horizontal and vertical positioning

Once the unit has been secured to its stirrup and pole, it is needed to proceed with resumption angle regulation of vertical (tilt) and horizontal (pan).
Link READERPLATE to Personal Computer by Ethernet cable.

Connection Readerplate-PC:

| READERPLATE	Link	Personal Computer
Original Ethernet cable with connector RJ45 male	Switch 100Mbps	Original Ethernet cable with connector RJ45 male

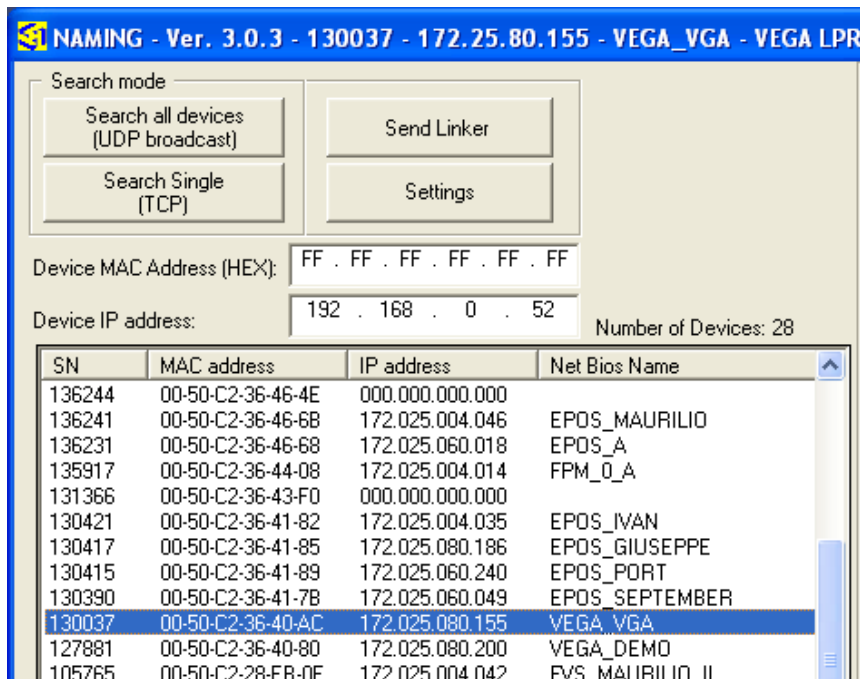**Since power source is not provided, use 24 Vdc sources with min. 2 Ampére.**

Remark : pay attention to right polarity.
Further details can be found on page 18

Open the program Reader Plate Setup (FAAC) or the program Naming (ReaderPlate) on Personal Computer.
Use one of those two tools software, to find the READERPLATE IP address.

SW ReaderPlateSetup window
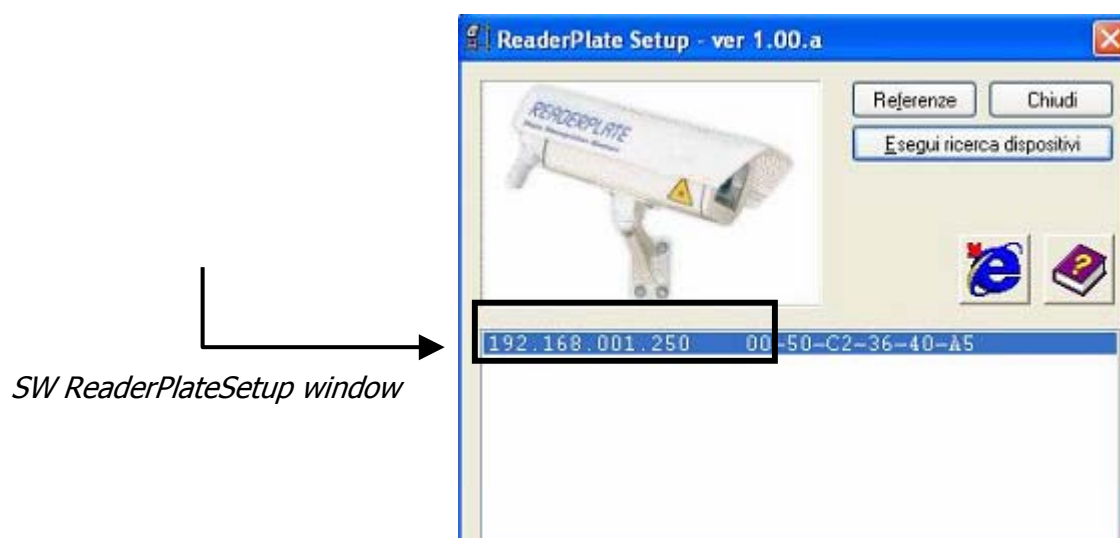
Program Naming window

Set IP address of READERPLATE read through one of the two above mentioned.
Select this IP address on Browser (Internet Explorer) and press the key RETURN. See the picture below as example.

Example of IP address

Note: The PC IP address, must be fixed and on to the same camera net.
Check that on browser navigation must not be set up PROXY.

Browser to be selected on menù: Tools> Internet Options > Logon's > LAN settings
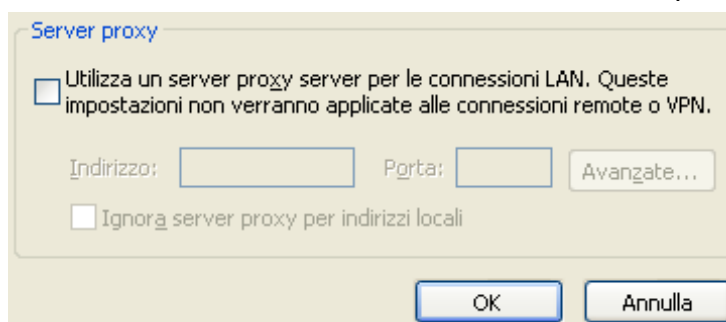
Example of proper configuration of "Server Proxy"

From borwser of internet explorer, to enter on camera set-up, the side screen is proposed.

User name   : **admin**

Password   : **adminvega**

Remark: It is recommended to replace the default username and password with the customer ones. Please refer to READERPLATE manual software.

Click on the icon to access the page **FRAME GRABBER** in order to display the live image.
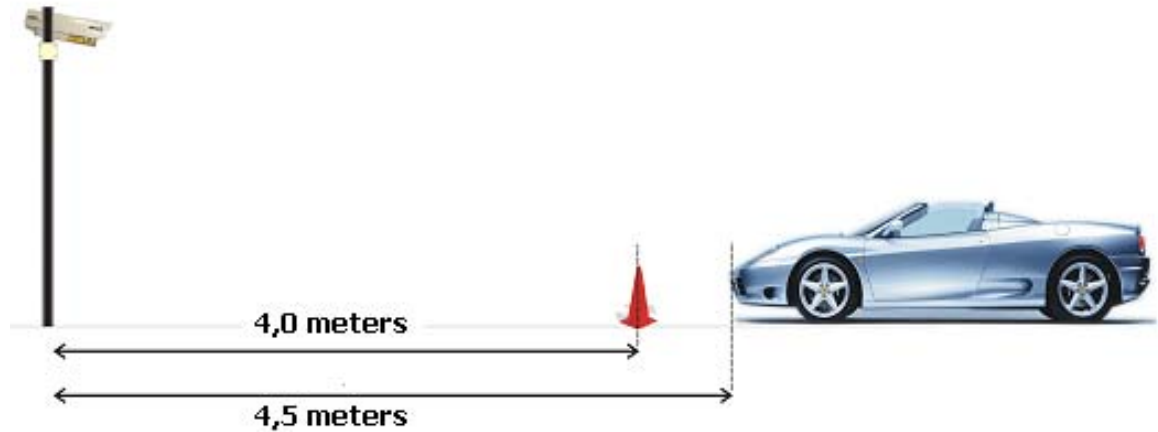

Frame Grabber

5.1 How to locate the reference cone

Longitudinal positioning
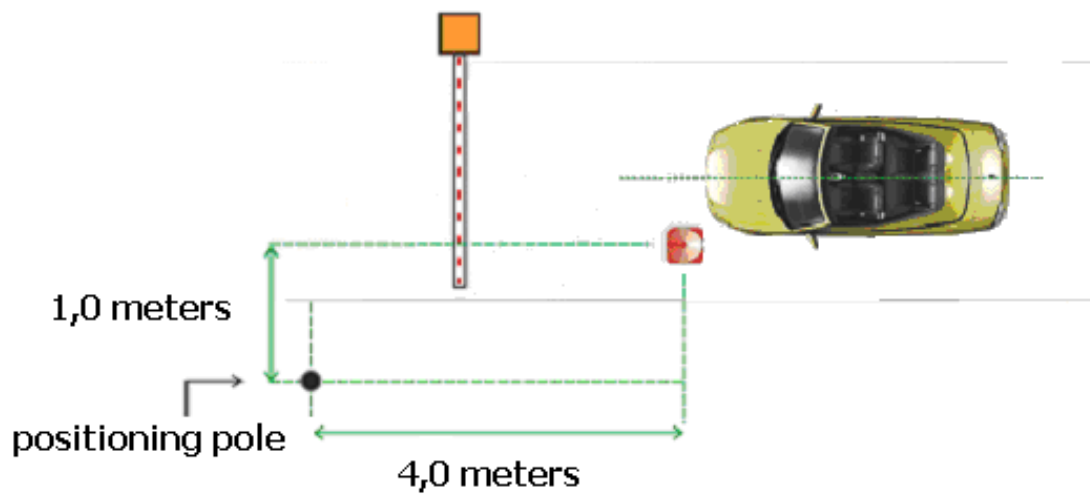The cone must be located, as reference, at the longitudinal distance of 4 mt. from the pole.
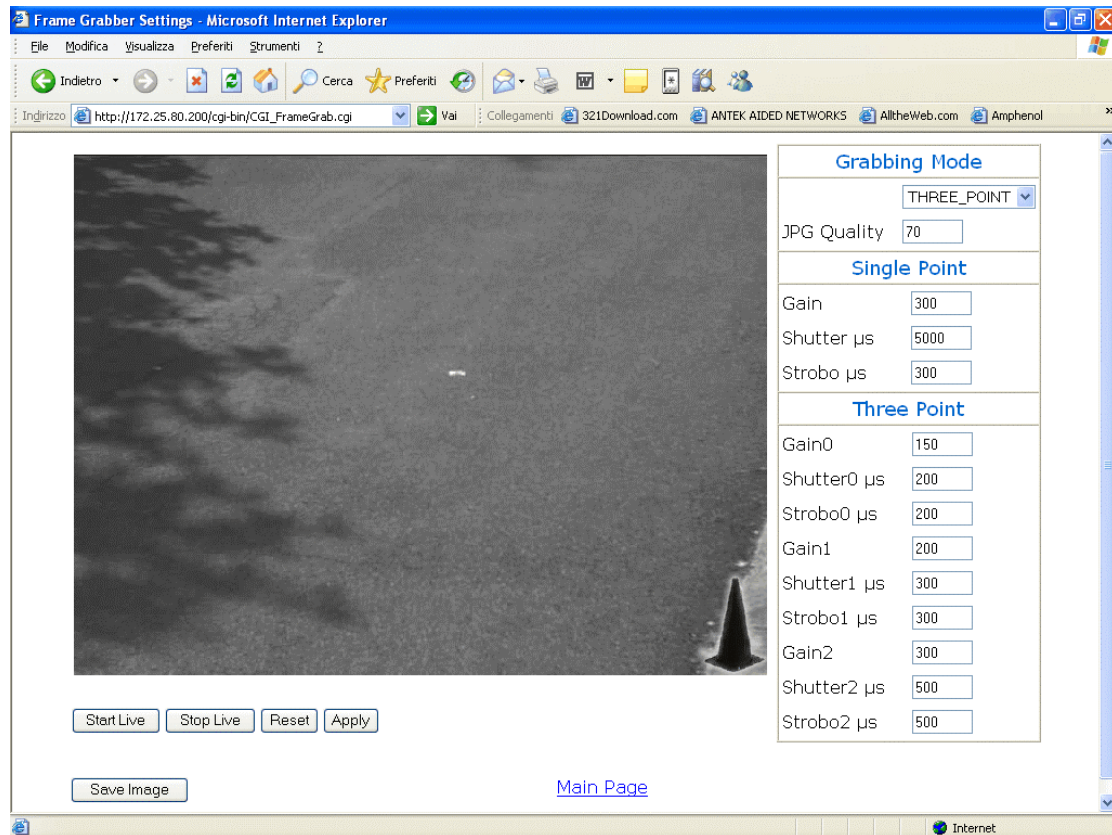See the picture below.

4,0 meters

4,5 meters

Lateral positioning
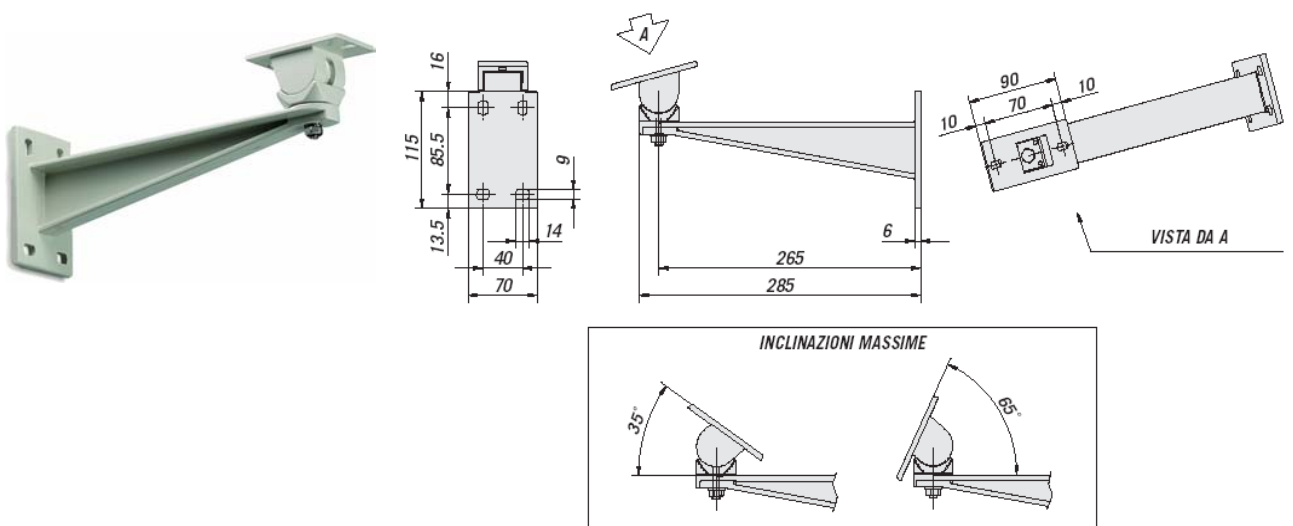The same cone, further to be at 4 mt distance from pole, must be located 1 mt lateral distance from the pole.
See the picture below for better understanding.

1,0 meters

positioning pole

4,0 meters

The right place to see the cone through camera READERPLATE, is bottom right as per following picture.

Once the image is like the above one, fix nuts on stirrup (see next pticures).

Now the READERPLATE VGA unit is properly positioned and ready to operate.

6. Minimum and maximum plate characters size

The procedure that follows, must be strictly respected.

1. Park a car or "plate sample" (not photocopy) on the reading area
   (from 4,7 to 6,3 mt).

2. Start the Browser of navigation on PC, insert the IP camera address and enter
   username + password

3. Select "Frame Grabber" mode and get an image using
    the command "Save Image".
    The "default" image has the name : *ThreePointImage.jpg".*

4. Copy the image on "desktop" by click on right mouse key.
   Then select "save image with name" and insert the due name.

5. Start an "editor of images" program and opening the image
    previously saved on "desktop" .
    This images editor can be downloaded on the following web site :

   http://www.irfanview.com .

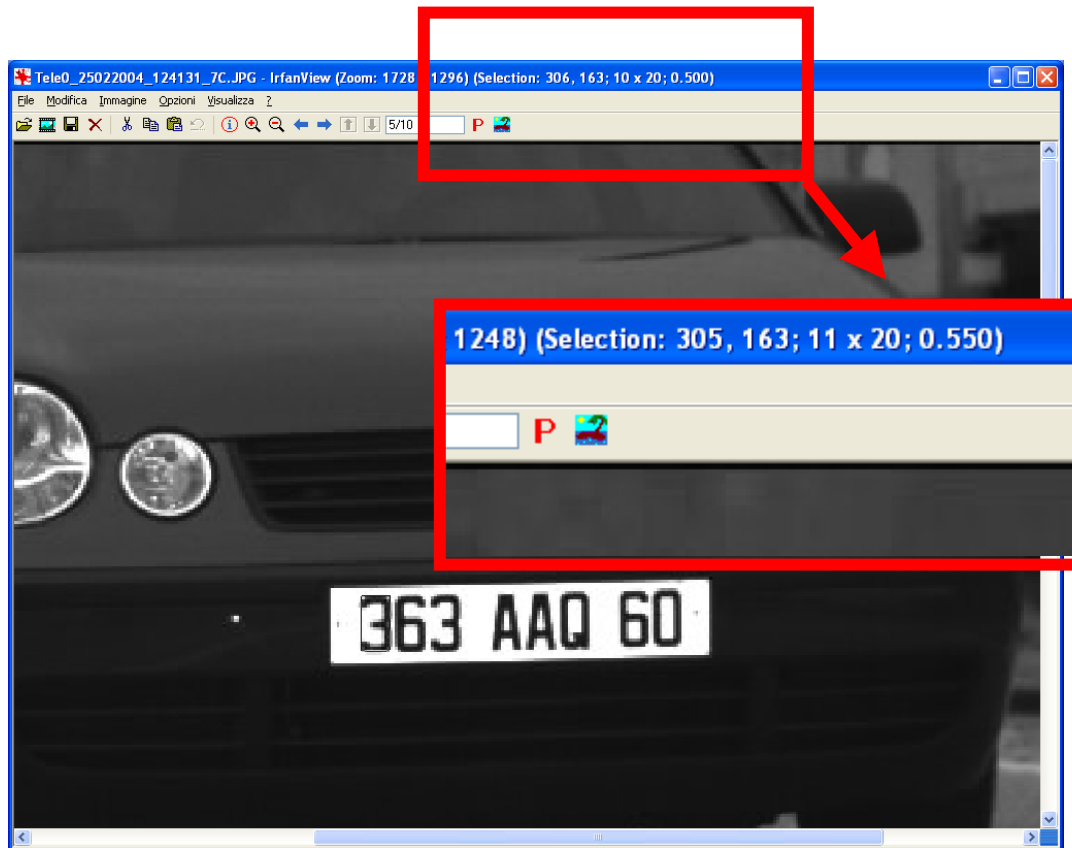**6.** Open the image previously saved and, if needed, enlarge the image with zoom.
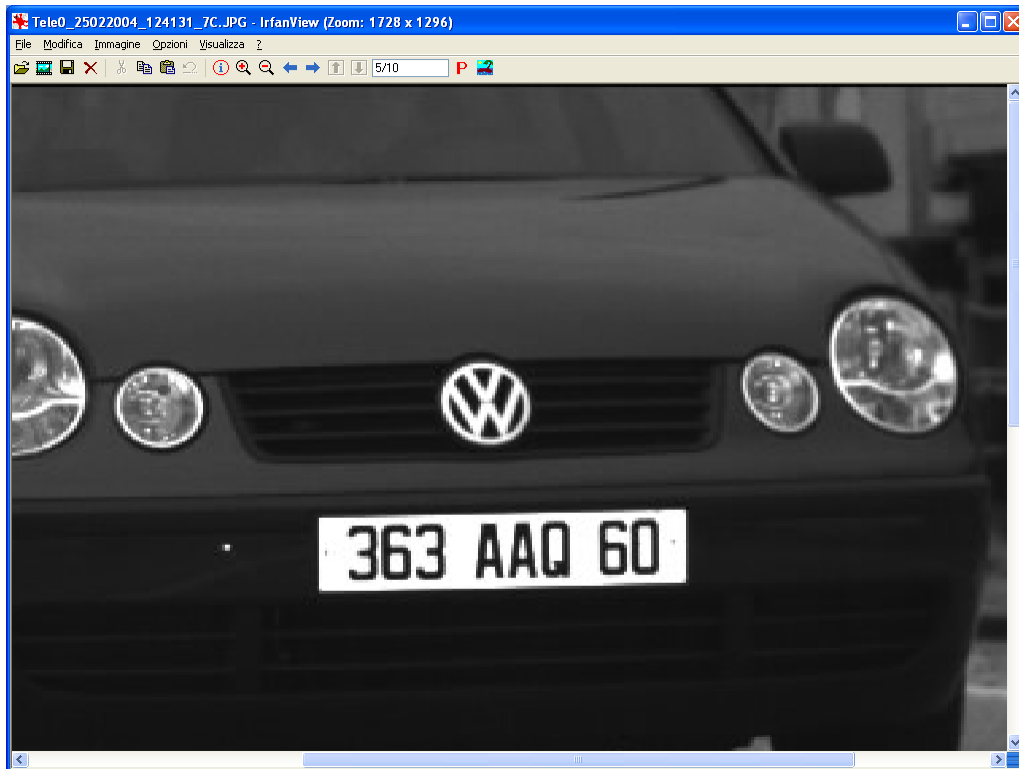
7. With the mouse, select (on the image) a letter or number of the plate.

8. Read on the tool bar, size of selected character, in pixels.
The above image sizes are the real ones detected from camera.

9. Do the same as above, for both, max and min reading distance.

On the above example:
11 x 20 corresponds to 11 pixels of character width and x 20 pixels of character height

10. Insert all 4 sizes, detected by the two readings, on the
mask "Plate Reader Settings" of the configuration unit program

Char Size in Pixel

Min Width	8
Max Width	30
Min Height	16
Max Height	60

<- minimal character width of the plate

<- maximum character width of the plate

<- minimal character height of the plate

<- maximum character height of the plate

IMPORTANT REMARK:
It is mandatory that the minimum sizes are the one on
the picture below.

Minim character Width > 8 pixels

B **Minim haracter Height > 15 pixels**

11. Detailed lists of link and wiring

Power source on resumption point : cable 2 wires cross section 0,50mm2	24 Vdc +/- 5% 2A Brown cable: + 24 Vdc, White cable : 0 Vdc.
Input:	n° 2 signal input, 24 Vdc, PNP 10 mA or TTL
Output:	n° 3 output for commandsi, 24 Vdc, PNP 200 mA As alternative (Kit 3 Relays -OPTIONS): Clean contacts Nr. 3 Relays SPDT (Common, NA, NC) – Vmax 48V Ac / Dc
Interface of net:	n° 1 Ethernet 100 Mbps, RJ 45, pin to pin cable

Nota: The READERPLATE is provided pre-wired with (5 meters) cables including power source and Ethernet cables.

Serial ports and inputs/outputs signals, are available on terminal clamps that is inside

Working conditions and Mechanical characteristics:
System READERPLATE is provided with a case suitable for both outdoor or indoor installation.
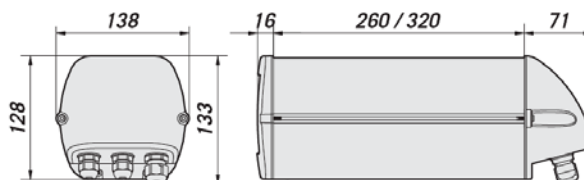IP rate is IP 66 (according to standard EN 60529).
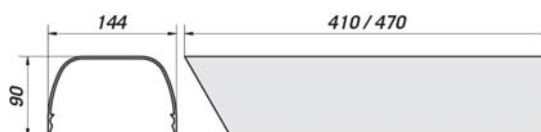The temperature range is: - 10° C to +55° C.
The range of the of relative humidity is: from 10 to 85 % humidity not condensed.

 Dimensions of case:

Rear and side sight

Sight of cover

Frontal sight

Length stirrup   285mm