



VIDAR Speed Installation Guide



This guide contains an overview of the hardware and required components, suggested scenarios and step-by-step guide for installation, and safety and maintenance instructions.

VIDAR SPEED

INSTALLATION GUIDE

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1. INSTRUCTIONAL VIDEO

VIDAR ANPR/LPR Camera: Setting the IP Address and Reaching the GUI:

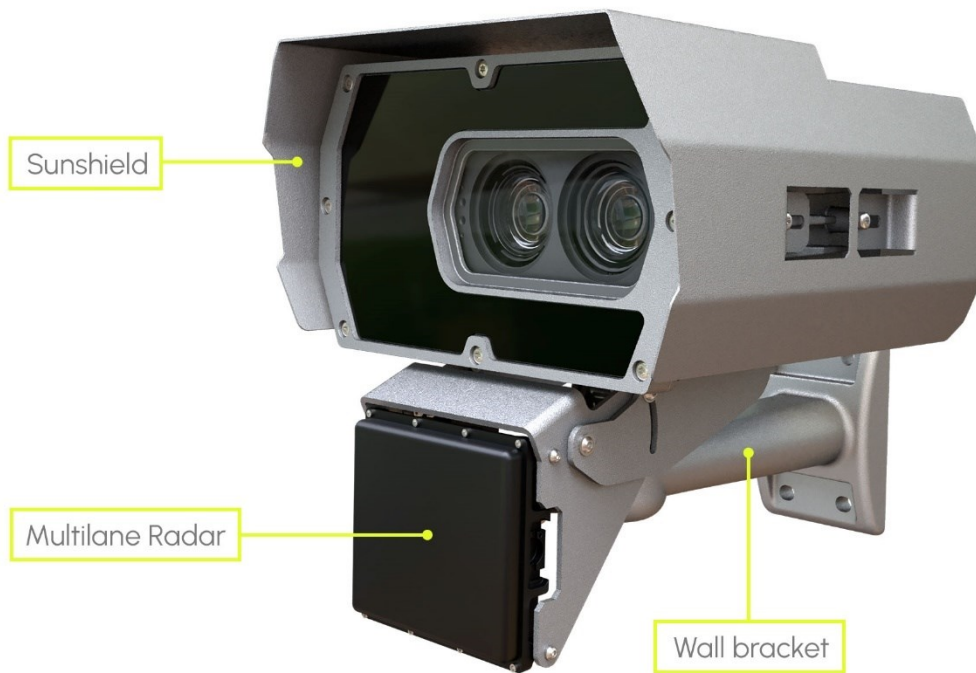
In this video, we guide you through connecting the VIDAR ANPR camera to a PC or laptop/centralized router/switch to set it up by covering the following:

- Setting a static IP address
- Reaching the device's graphical user interface.

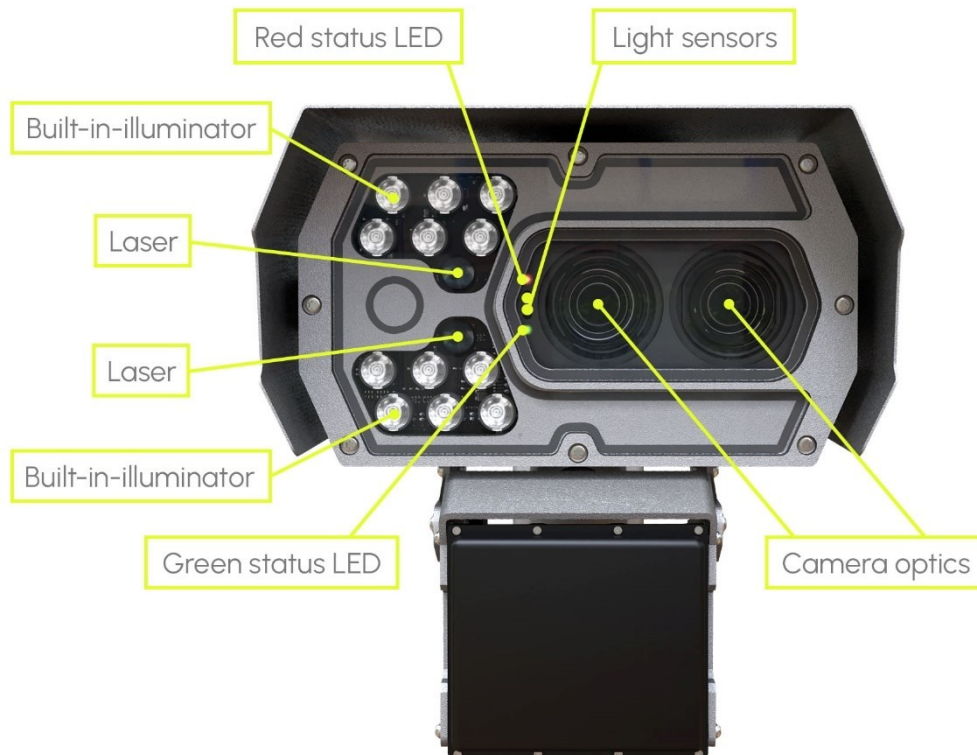
<https://www.youtube.com/watch?v=JQ3rIBzwGYU&list=PLFiWaPY4v7LwJKqy5Jpdbq9YdhmgUIORZ&index=3>



2. HARDWARE OVERVIEW



Camera with bracket



Camera front

3. REQUIRED COMPONENTS

1 Vidar ANPR/ALPR Camera

2 Bracket

3 Radar

OPTIONAL

4 Synchronized External Illuminator with Cable and Bracket

5 Power Cable (2 m)

6 Ethernet Cable (2 m)



1



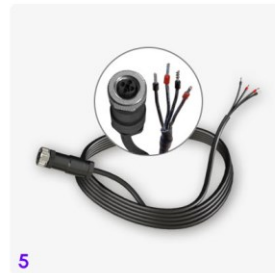
2



3



4



5



6

The box contains:

- Vidar camera
- Bracket
- Radar

Optional parts:

- Power cable
- Ethernet cable
- Junction Box

Assets needed:

- Size 3 Allen key + Torx T20 screwdriver
- PC to reach web interface
- In case of lost IP address: recommended strength of the magnet is 1210 mT (millitesla).

4. RECOMMENDED INSTALLATION

1. Camera has to mount in horizontal position, do not rotate it any direction!



Correct camera position



Do not rotate the camera any direction from the horizontal position

Roll must be 0°. You can check the ROLL on the camera GUI here: **(Maintenance > Sensors)**

The screenshot shows the 'SENSORS' page in the VIDAR SMART interface. The left sidebar contains navigation options: BASIC SETUP, ADVANCED SETUP, ANPR, MAINTENANCE, SYSTEM INFO, SENSORS (highlighted), CAMERA LOG, UPDATE / AUTO UPDATE, BACKUP / RESTORE, FACTORY RESET, RECOVERY MODE, RESTART, and HELP. The main content area is titled 'SENSORS' and is divided into two sections: 'HORIZON (CAMERA)' and 'LIGHT SENSOR / TEMPERATURE'. The 'HORIZON (CAMERA)' section shows a circular gauge with a blue bar and displays 'Tilt: -36.8°' and 'Roll: 0.0°'. The 'LIGHT SENSOR / TEMPERATURE' section shows two circular gauges: one for '2719.00 lux' and one for '28.00 °C'. The top right corner of the interface shows 'ADAPTIVE RECOGNITION', 'EN', and the version '2023.3.1-1207'. The bottom of the interface displays 'Software Version: 2023.3.1-1207' and 'Copyright © 1993-2023 Adaptive Recognition Hungary. All rights reserved.'

! Important!

Do not be placed in a tunnel, under a bridge, near a billboard, crossing traffic, a bend and a large metal structure next to the road!

2. Connect the cables to the designated connectors. Seal the unused cable endings with end sleeves before connecting to power!
3. Make sure the connecting cable does not lead rainwater drops into the camera housing!



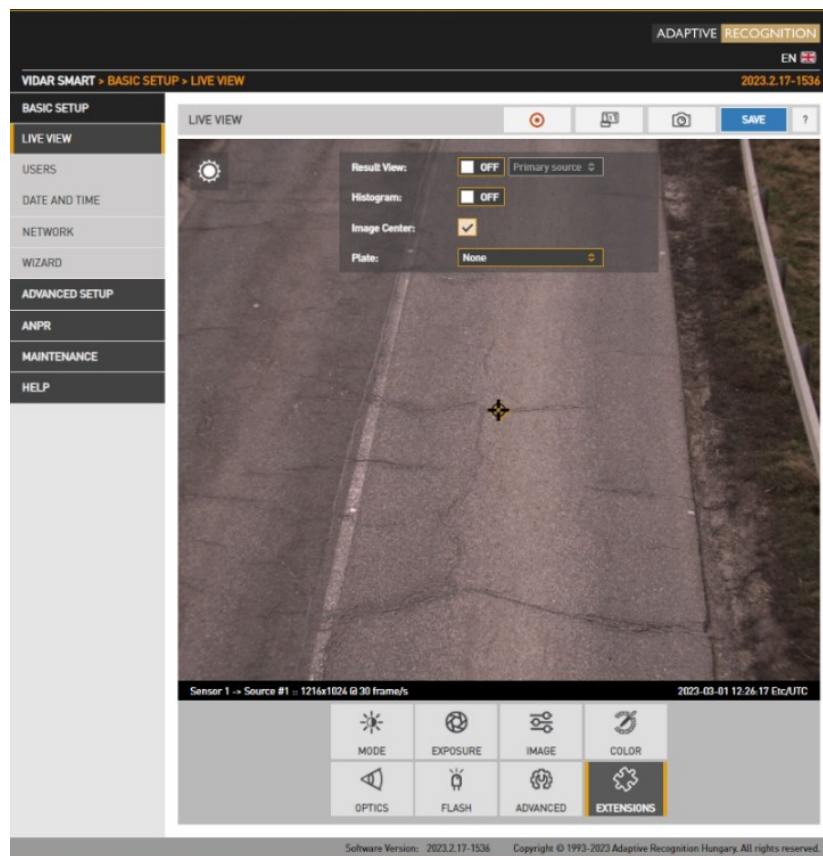
4. Water may enter into the camera inside through not properly sealed connectors. To maintain the camera's watertightness please make sure that connected cables are tightened properly and the unused connectors are capped.



5. Failures due to inappropriate installation void the warranty, the accuracy and the whole operational % might be decreased!
6. Avoid east-west orientation of the camera.
7. The camera should be lowered below the horizon.

8. The number plate should be in the center of the image/lane when monitoring 1 lane.

- Path: BASIC SETUP > LIVE VIEW > EXTENSIONS



9. License plates should appear around the center of the image when monitoring 2 lanes (5MPx).

10. If you buy a certified VIDAR Speed all in one, you don't have to physically set it on the RADAR!

11. **Overhead installation** - when camera placed above the lane
 - Height: 7 meters
 - Between two lanes
 - Trigger point: 25-30 meters away (from the camera)
 - Approaching traffic
 - The radar should not be tilted compared to the Vidar
 - Typical application areas: external: highway
12. **Transversal installation** - when the device is installed on a pole near the road and it has to be:
 - Minimum tracking distance for detection: 20 meters

! Important!

The vehicles are detected by the radar separately in both installation situations, if having either:

- A minimum of 1.2 km/h speed difference
- At least a 2-meter distance difference between the two vehicles measured from the radar.

Please read the conditions for the correct radar requirement in the more detailed

[Plan your site](#) section below.

5. INSTALLATION STEPS

5.1. POWER SPECIFICATION

The required input voltage is model dependent (Vidar + external illuminator is 36V DC, standalone Vidar 24V AC), please use the proper input according to your model! Please consider voltage drop if you use long cables!

Using DC power supply is recommended when an external illuminator is used, as powering can be done from the same supply.

	Camera with HDx sensor	Camera with FullHD sensor
AC Input	isolated 24 - 28V AC (sinusoidal)	
Power (typical)*	11 - 19 W	18 - 26 W
Power (max. / max. with heating)	25 / 51 W	26 / 52 W
Over-current Protection	by fuse	

* - Depending on usage and configuration

See Appendix for recommended power supplies at section [10.1](#).

For safety reasons please use proper or equivalent fuse protection on input power at the source:

Product: Glass Fuse

Current Rating: 3.15A

Fuse Type: Time delay / Slow Blow

Fuse Size: 5 mm x 20 mm

Voltage Rating AC: 250 VAC

Mounting Style: Holder / Clips

Minimum Operating Temperature: -55 °C

Maximum Operating Temperature: + 125 °C

See Appendix for recommended protection fuses at section [10.1](#).

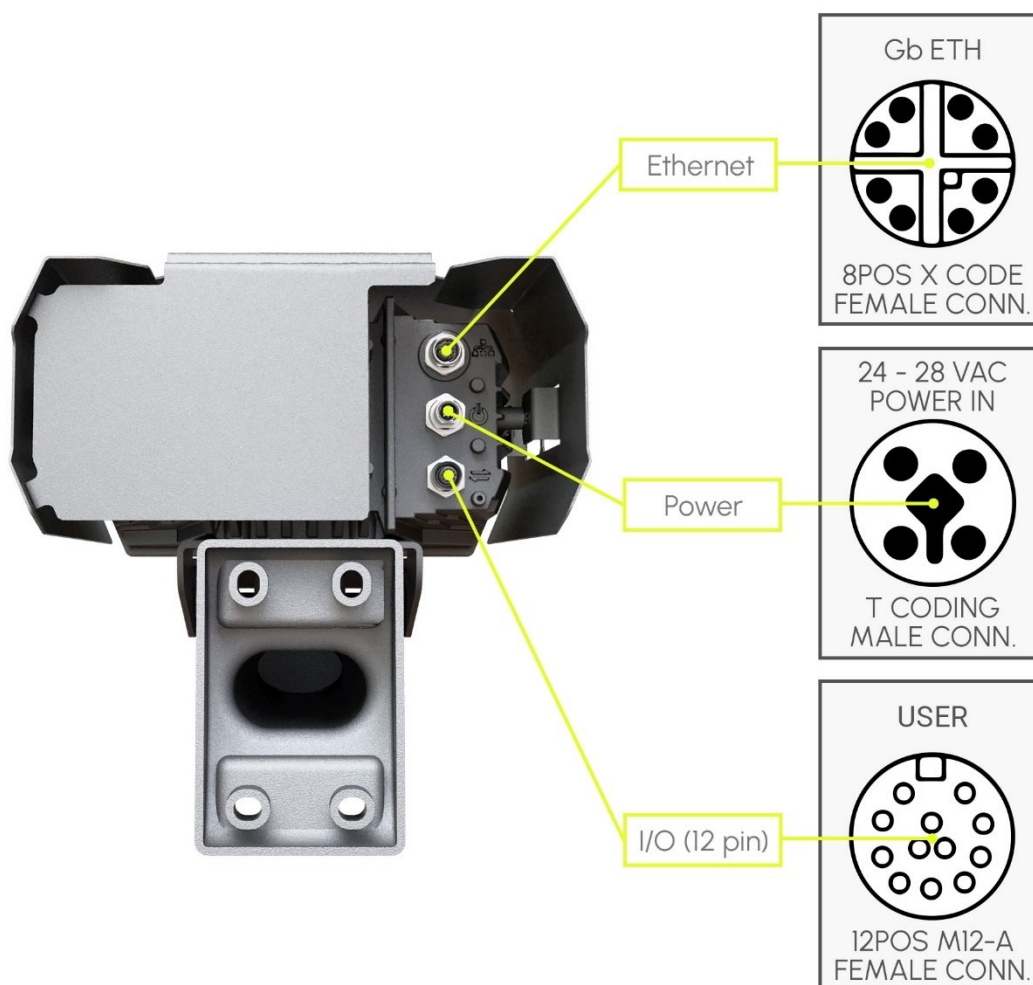
Note

To power off the camera (e.g. in case of relocation) please disconnect the power cord from the device by releasing the screw locking mechanism of the power connector, or disconnect the 24-28 VAC 50Hz power source from the camera power cord.

Important!

1. When performing a power reset, please wait at least 10 seconds before turning your power source on again.
2. Please make sure that the power cable is firmly connected to the camera before the power is applied when installing the device.

5.2. CABLE LAYOUTS



Power

4 pos. M12 T coded, Male

Input voltage should be connected to AC1 and AC2. Both signals are connected to two pins (a and b) to allow for larger effective cable diameter/two wires for each potential. AC1_a and AC1_b are connected in the device. AC2_a and AC2_b are connected in the device.

See Appendix for more details at section [10.2.1](#)

Ethernet

(8 pos. M12 X coded, Female) RJ45

Wire colours and RJ45 positions refer to those in the supplied standard ETH cable. Use quality outdoor Cat6 cable.

See Appendix for more details at section [10.2.2](#)

Smartmicro radar:

SENSOR CONNECTOR

The sensor connector is a 12-pin male (plug) circular bayonet type connector (waterproof IP67, series LF10WBRB-12PD, manufacturer Hirose, Japan). A female counterpart (socket), e.g. LF10WBP-12S, must be used to connect with the sensor.

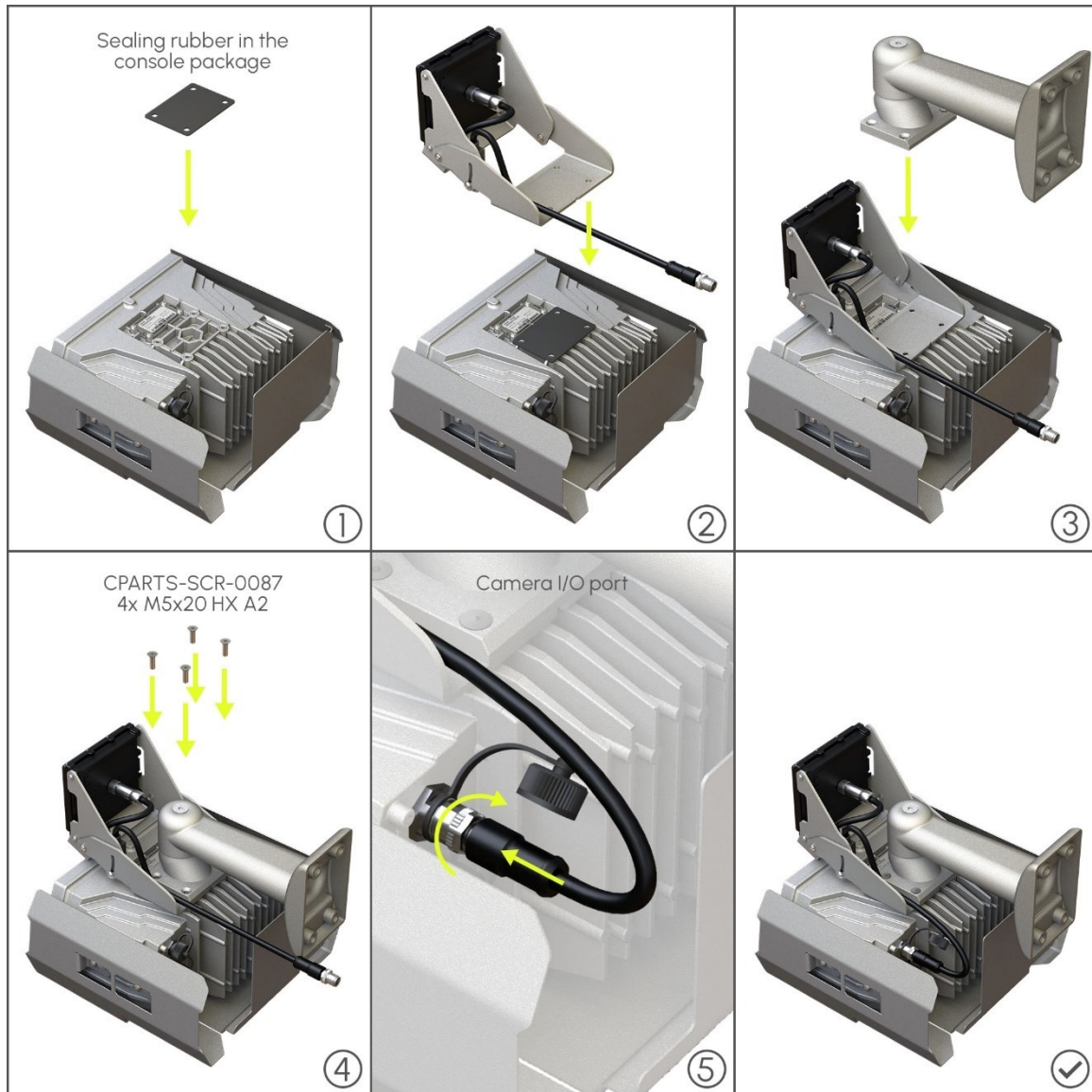
Please note that in the standard configuration the sensor does have a 120 Ohms resistor on board (CAN bus termination between CAN L and CAN H). Likewise, for the RS485 data interface there is a 120 Ohms resistor on board of the sensor. This resistor is required at either end of a CAN / RS485 bus.

Several cables set for initial operation and test purposes are offered by Smartmicro, to deliver a fast setup of a sensor system. Among those preconfigured ready-to-run cables as well as cable stumps (pig tail cables or various lengths) which carry the connector on one side and open wires on the other.

See Appendix for more details at section [10.2.4](#)

5.3. RADAR INSTALLATION

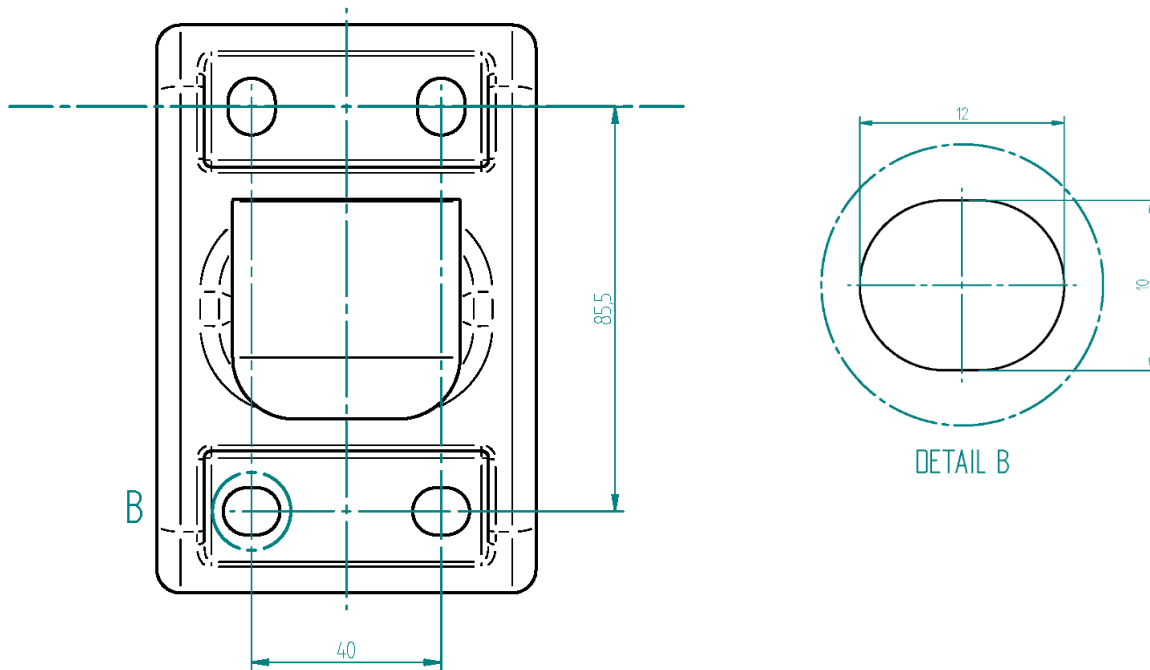
For a precise measurement the installation geometry must be determined precisely. One must find balance between numerous factors (field of view of radar and camera, trigger distance, character size for LPR, illumination, etc.). The following section will guide through this installation process.



! Important!

Only the fasteners included in the radar package can be used; the use of any other washer and fastener, or in case of deviation from the assembly instruction, the measuring device becomes unsuitable for authentic speed measurement!

5.4. BRACKET DETAILS AND SIZES



Note

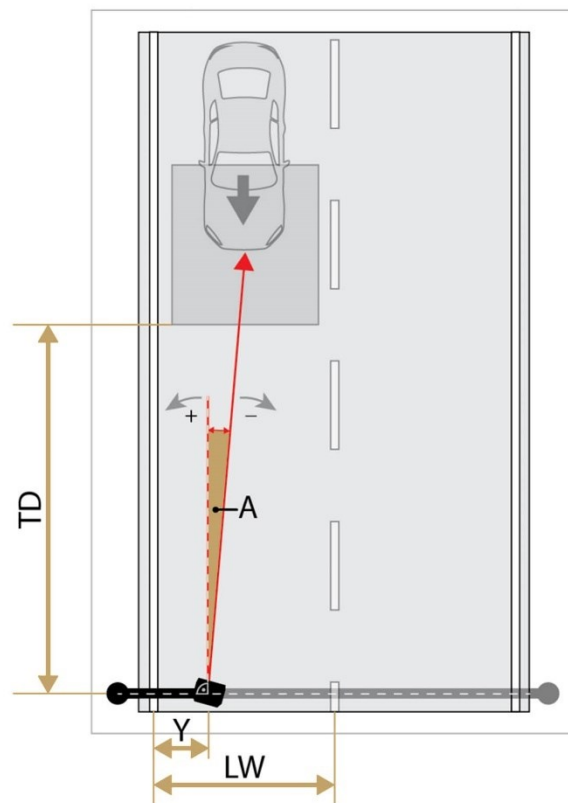
To ensure proper mounting of the camera with bracket please use the largest possible fastener (e.g., fastening screw with DIA 8 mm).

Important!

Only the camera's own screws should be used to fasten the shield and the bracket. Using other fasteners can damage the device, pose a risk, and generally result in warranty loss!

5.4.1. GENERAL

- Use meters and degrees.
- All angles follow the usual sign convention: counterclockwise is positive.
- The origin of the coordinate system is where the left side of the road meets the installation point. The X axis points along the road, the Y axis points left. See figure.



Installation geometry includes the following (not necessarily independent) values:

- Y offset of the device, measured from the origin/ side of the road.
- Lane width
- Elevation angle. Down is negative.
- Azimuth angle. Right is negative.
- Trigger distance

If you need to, always measure distance and calculate angle. In the relevant range, an angle measured with a precision of one degree roughly corresponds to a distance measured with a precision of half a meter.

The radar is factory set up to have the radar and the camera aligned (not precisely but for practical purposes).

! Important!

It is not recommended to modify the radar console settings.

It is possible for one person to carry out the installation, but it is a far easier for two.

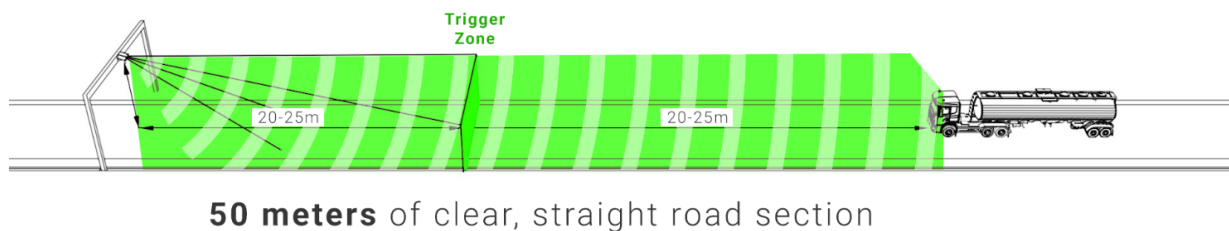
5.4.2. PLAN YOUR SITE

A good installation site is the basis of reliable operation. When choosing an installation site, a couple tens of meters can make or break the system.

- The device needs to track the vehicle for 20-25 meters before the trigger zone for successful detection. The radar may not catch vehicles detected within this distance (e.g., turning). Ideally, the terrain should be "clear" from the installation point up to 50-60 meters in the monitored direction. Following the previous point, the analysed road segment should be straight (lane changes do not matter).

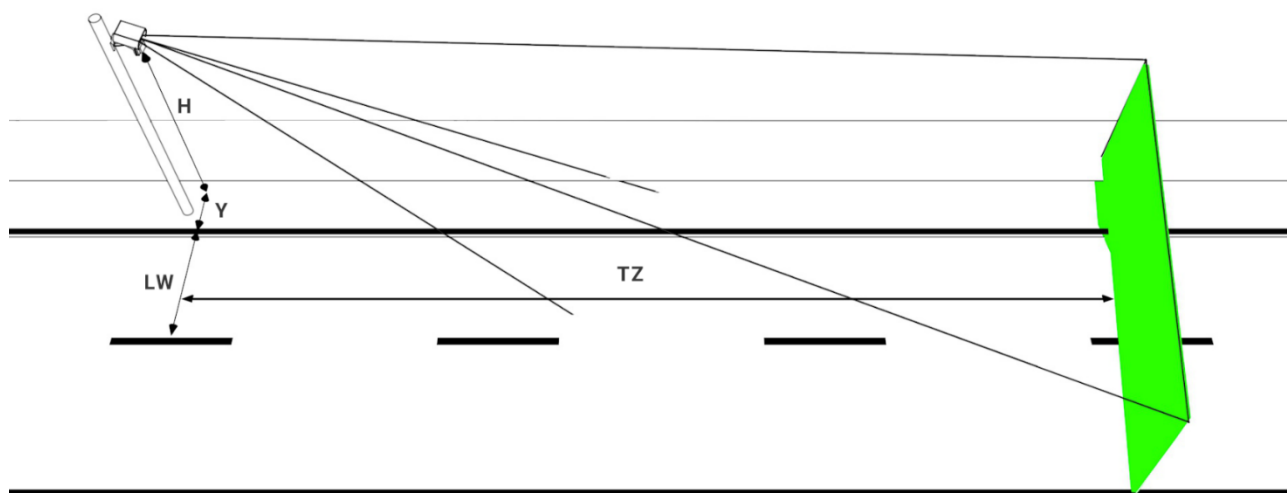
! Important!

It is important to ensure that the monitored traffic is moving at a relatively constant speed (free-flow) and is not subject to stop-and-go patterns, such as those caused by traffic lights, intersections, or other similar situations. Avoid placing the cameras in areas where vehicles frequently stop and start, as this can impact the accuracy of speed measurements and lower the number of captured objects/events.



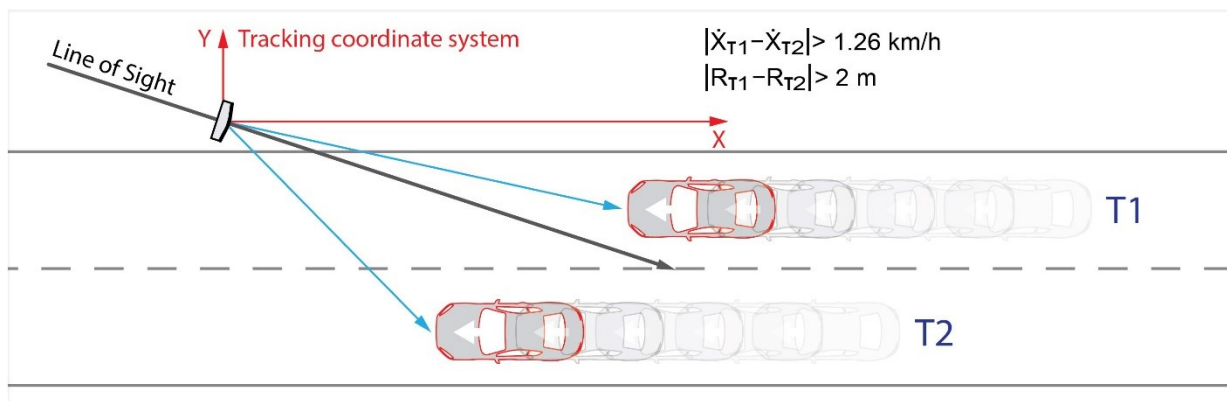
- Maintaining the appropriate mounting height is crucial for optimal performance. The minimum recommended height is 4 meters. Remember that for pole installations, you also need to see over the incoming cars (for gantries, the minimum is generally 6 meters because there needs to be enough clearance underneath). Heights lower than this comes with a reduction in detection rate, especially in more distant lanes.

- Ensuring accurate coordination between the radar's and camera's coordinate system is crucial to know when a vehicle (detected by the radar) enters the camera's field of view. Additionally, precise speed determination requires the radar to have knowledge of the exact installation parameters. Therefore, precise speed measurement requires precise installation mapping. The crucial measurements include:
 - Radar installation height relative to the monitored road segment.
 - Trigger zone distance (TZ) from the camera, measured along the road.
 - Camera distance from the edge of the nearest lane (Y).
 - Width of a single traffic lane (LW).

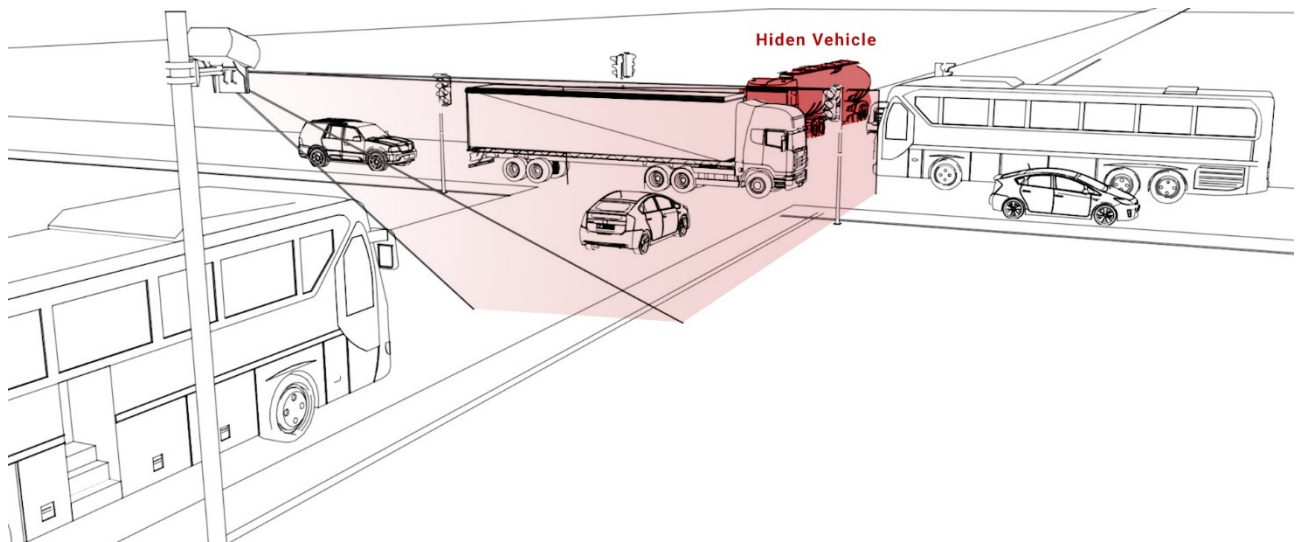


- For objects moving within the detection zone to be distinguished from each other, at least one of the following conditions must be met:
 - The objects have different speeds (min. 1.26 km/h)
 - The objects are at different distances from the measuring device (min. 2 m)

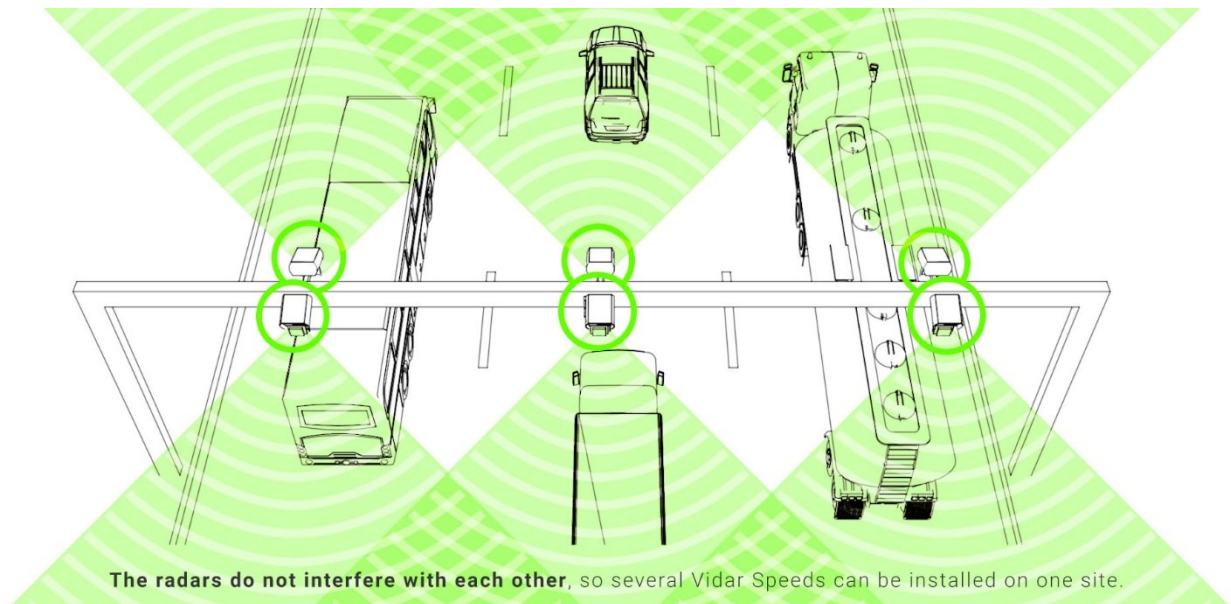
The measuring device assigns a unique identifier to each object entering the detection zone and continuously tracks their movement until they leave the zone.



- Clear line of sight: The radar has a complete view of the monitored road section. Anything that would block human perception (such as a blocking building or tree) similarly blocks the radar from detecting vehicles. This also includes, for instance, a truck crossing the road that could block incoming vehicles.

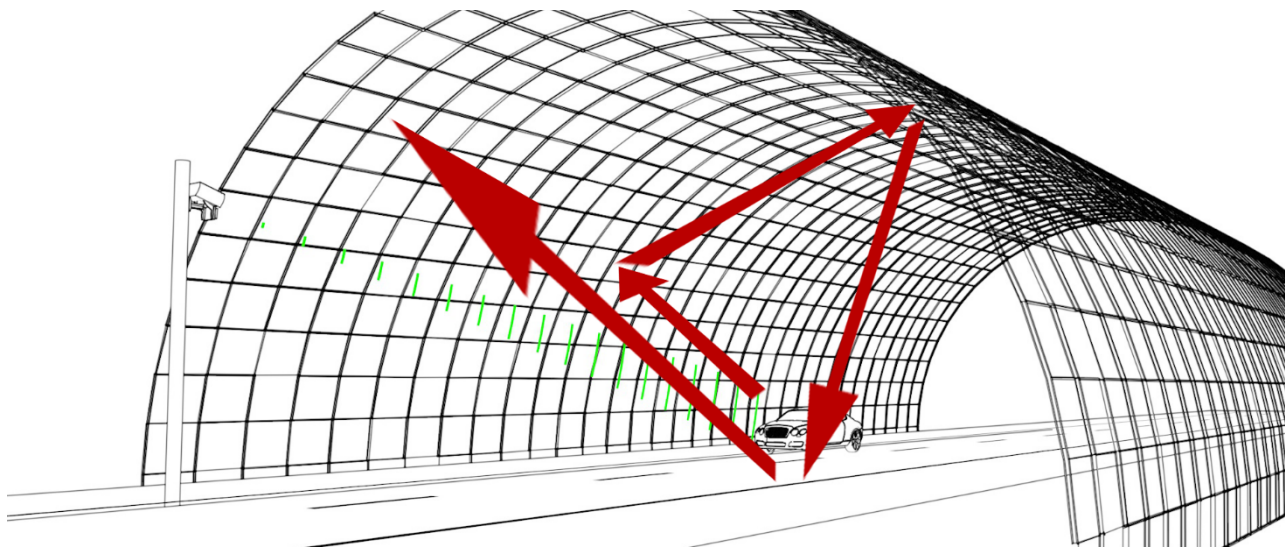


- Radars do not interfere with each other, so multiple Vidar Speed devices can be installed on one site.

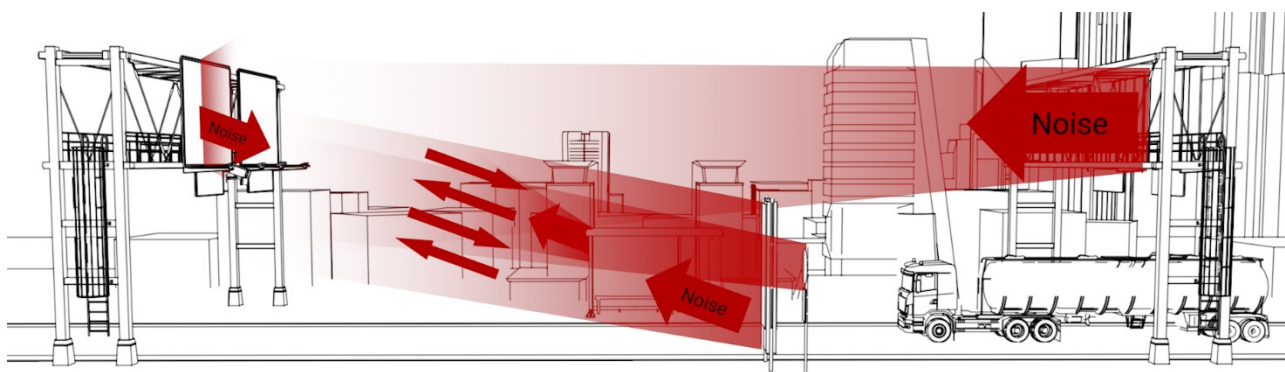


- If possible, avoid up/downhill road sections, where proper interpretation/measurement of installation geometry is more complicated.

- Radar is unsuitable for placement inside tunnels. It's also advisable to avoid having the camera look under a bridge.

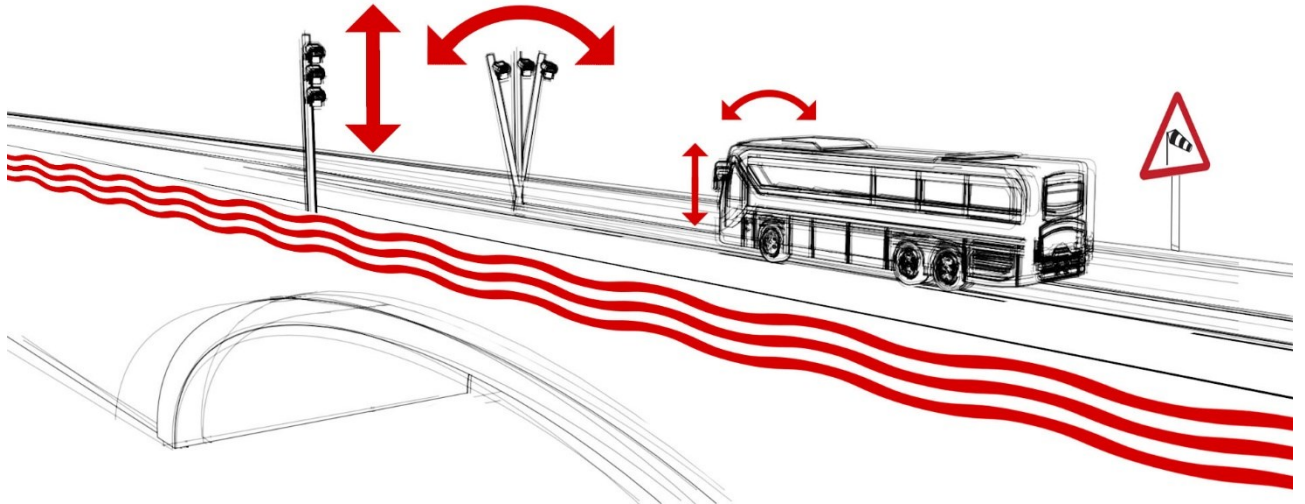


- Be cautious of substantial metal structures near the road, like billboards or bigger road signs as they act like a mirror, and might reflect back the reflected radar waves from vehicles generating "ghost" events. Even when positioned behind the camera, these objects can reflect the radar waves in an unwanted way. They may interfere with radar signals, potentially compromising the accuracy of speed measurements. Ensure a clear line of sight for the camera by minimizing the presence of such metallic obstructions in its vicinity.



- The camera (highlighted with golden circles) mounted beneath a highway road sign. The radar reflection from an approaching vehicle bounces off the sign, creating a second "virtual" image (ghost event) of the vehicle. This scenario can lead to unintended detections and potential inaccuracies.
- Consider the line of sight for both the camera and the radar. Occlusions bring hit statistics down.

- Avoid locations prone to ground vibration or where the device would “swing”, as this can impact the speed measurements. Choose solid and secure mounting points to minimize camera movement. The camera’s gyroscope automatically flags all events as “non-certified” after any significant movement, requiring manual clearance through the camera’s GUI (this feature was added to firmware V2023.11.14-1121 so make sure you have this version or newer).



- For detailed information see [Optimizing Speed Camera Performance.pdf](#)

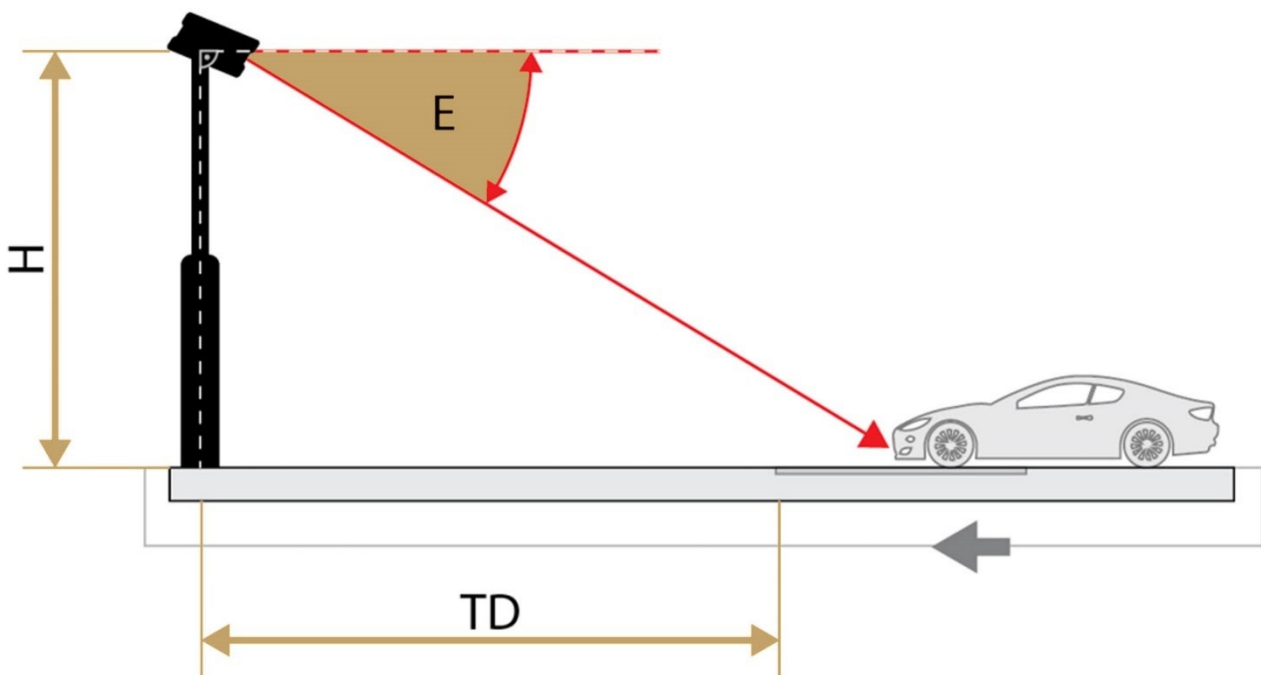
5.4.3. DEFAULT VALUES, BEST PRACTICE

Hard limits, use these values when designing the site.

- Mounting height (**H**): 4 to 9 m
- Elevation angle (**E**): -9 to -20 deg.
- Azimuth angle (**A**): -15 to 15 deg.
- Trigger distance (**TD**): 20 to 35 m.

The key value is **elevation**. Use the following table to choose a default elevation angle for your installation height:

Installation height [m]	Elevation [deg.]
4	11
5	12
6	13
7	15
8	17
9	18



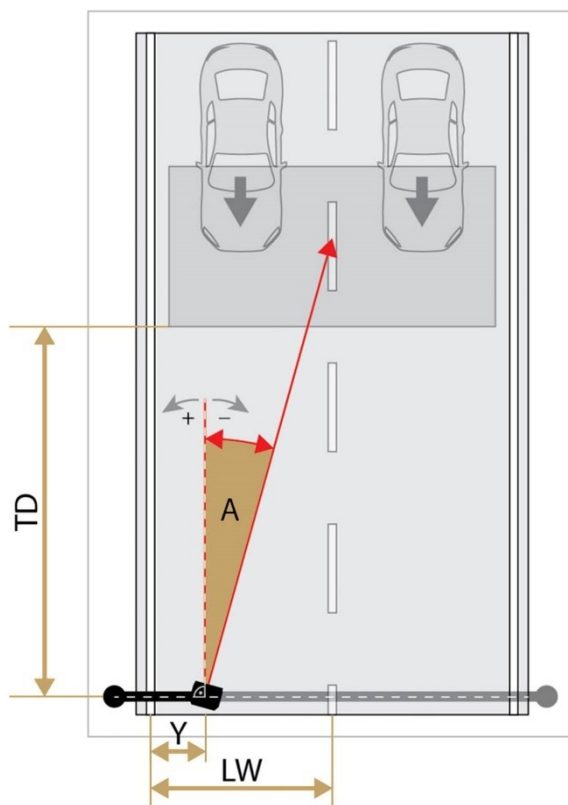
5.5. INSTALLATION

5.5.1. A - INITIAL MEASUREMENTS

- A/1: Measure the lane width. Enter the value to LW in two significant figures.
- Measure the installation height from the ground up to the radar front. Enter the value to H in two significant figures.
- A/1: Measure the Y offset from the side of the road to the radar front. Enter the value to Y in two significant figures.

5.5.2. B – ALIGNMENT

- B/1: Use a H5 Allen key to loosen the M8 hex screw in the console so that the device can be aligned with ease.
- B/2: Apply the above discussed default elevation to the device. Use the built-in accelerometer displayed on the GUI. At this step do not try to be very exact yet.
- B/3: Display the indicator of the image center clicking BASIC SETUP / LIVE VIEW / EXTENSIONS / Image Center.
- B/4: Try to keep elevation at the previously set value and following the video stream rotate the device until the image center is either
 - at the middle of the lane (1 lane),
 - on the median (2 lanes), or
 - in case of monitoring a larger section (3 or 4 lanes), consult with the manufacturer about site-planning restrictions.



- B/5: Now check if elevation is within 0.3 degrees of the prescribed value. Correct if necessary. Work in small increments. The measurement is displayed each second.
- B/6: Also make sure the displayed roll less than +/- 0.3 degrees.
- B/7: Check roll, elevation and image center again. Correct if necessary.
- B/8: Tighten the M8 console screw.
- B/9: Check roll, elevation and image center again. Correct if necessary.
- B/10: Enter elevation to E. Trigger distance and azimuth will be calculated (but you can override the values, see: C/4 below)
- B/11: Set up zoom and focus so that the image covers the lanes and is in focus.

5.5.3. C – VERIFICATION

- C/1: Measure the displayed trigger distance (TD) along the road.
- C/2: Mark the spot on the road surface where TD meets the median (two lanes), or the middle line of the lane.
- C/3: Check if this point corresponds roughly to the image center. This is around where vehicles will be captured.
- C/4: For legal speed enforcement, you may need to measure the alignment of the radar with an independent/certified external device. In this case keep the alignment, and modify the corrected measurement values (Y/H/A/E). The difference should be minimal.
- C/5: Optional step - if a handheld doppler simulator is available during installation, it is recommended to re-check the position of the measuring device with the signal generator.

5.5.4. D – ANPR SETUP

- D/1 - Set up a ROI (Region-Of-Interest) corresponding to the lane(s). Push the CONFIGURE ROI #1 and CONFIGURE ROI #2 buttons to set up the ROIs for the corresponding lanes. Mark and save the area in which you would like to find license plates.
- D/2 - Click ANPR/ANPR SETTINGS and choose Trigger Frame for both Preselection and ANPR Stage. This way the previously defined ROIs will be used to find license plates.

5.6. WORKED EXAMPLES

Key	1	2	3	4	5	6
Lanes	2	1	2	2	2	2
LW [m]	3.75	3	3.75	3.75	3.75	3.75
Y [m]	0	1.8	0	0	0	1.2
H [m]	4	4	6	6	8	8
E [deg.]	-11	-11	-13	-13	-17	-17
A [deg.]	-10.5	0.8	0.0	-8.3	-8.2	-5.6
TD [m]	20.2	20.6	26.0	25.7	25.9	26.0

Cosine error [%]							
	Angle [deg.]						
Delta Angle [deg.]		-3	-2	-1	1	2	3
	3	-0.14	-0.12	-0.08	0.11	0.24	0.41
	5	-0.32	-0.24	-0.14	0.17	0.36	0.59
	7	-0.50	-0.36	-0.20	0.23	0.49	0.77
	9	-0.68	-0.49	-0.26	0.29	0.61	0.95
	11	-0.86	-0.61	-0.32	0.35	0.73	1.13
	13	-1.04	-0.73	-0.38	0.41	0.84	1.31
	15	-1.22	-0.84	-0.44	0.47	0.96	1.49
	17	-1.40	-0.96	-0.50	0.52	1.08	1.66

5.7. OPTIONAL WIRING

I/O (12 pin)

12 pos. M12 A coded, Female

Connector pinout and wire color coding. Colours refer to those in the supplied standard I/O cable.

See Appendix for more details at section [10.2.3](#)

Trigger specifications:

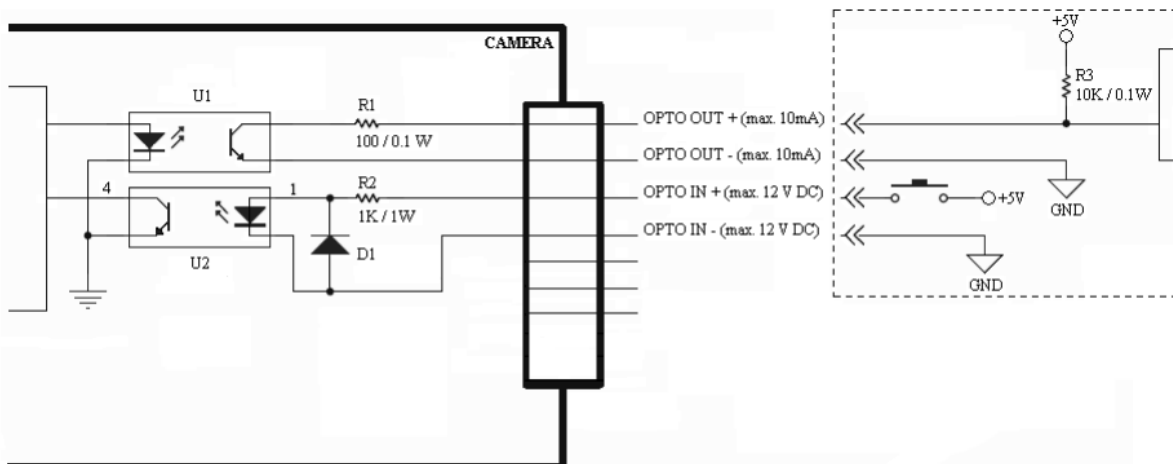
- **Input:** min. 5V, max. 12V
- **Pulse width:** min. 1 ms

Logic Output: min. 5V, max. 12V, max. 10mA

Note

Be aware of the polarity.

Schematic for triggering:



6. SOFTWARE REQUIREMENTS

The cameras are developed to operate without any kind of special software.

Software requirements:

- For network setup, administrator (root) privileges are necessary.
- Web browser: Mozilla Firefox 52, Google Chrome 51.X.X.X or later editions. If it is possible, update your browser (Firefox or Chrome) to the newest available version.

Note

To enable all camera functions, enable JavaScript control in your browser.

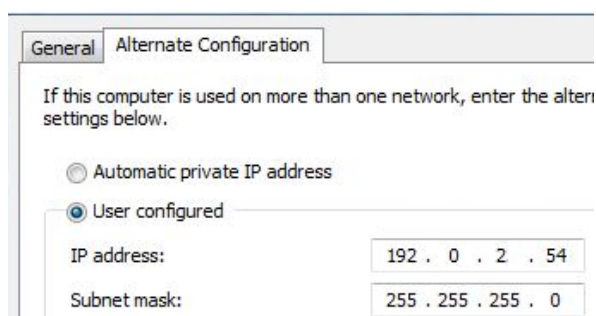
7. ACCESSING THE CAMERA

Steps of accessing the web interface of the camera from a browser:

1. Connect the camera to a computer or network switch, then power on the camera. After it is turned on, both status LEDs (red and green on the camera front) are turned on while the camera is booting. After finished, the green status LED flashes two times while the red one turns off signaling that the camera is ready for operation.
2. Enter an alternate IP address (or set your computer's IP) in the 192.0.2.x subnet – where x is an integer number between 1 and 254 **except 3** – with the subnet mask of 255.255.255.0.



3. For more information, see [Appendix](#).



4. Use the ping command to test the communication with the camera:

Windows: C: \>ping -t 192.0.2.3

Linux: username@mylinux:~\$ ping 192.0.2.3

5. Soon, the ping package returns: **Reply from 192.0.2.3**. If not:

- first check the Ethernet LEDs at the PC or the switch side
- check whether the IP address is set correctly; the own IP address of the PC can be pinged.
- proxy is set in the browser or the browser is not set to offline.

If these obstacles are checked and there is still no reply, power off then on and enter the previous ping command again.

6. Start a browser then enter the default IP address of the camera into the address bar (**http://192.0.2.3**). After this, the camera starts with administrator privileges, ready to be set up and configured.

Note

To enable all camera functions, enable JavaScript and ActiveX controls in your browser.

Next step is the camera configuration that is found in the User Manual:

<https://adaptiverecognition.com/doc/cameras/vidar-anpr-cameras/vidar-speed-cameras-for-speed-enforcement-and-anpr/>

How-to-video series on Youtube:

<https://www.youtube.com/playlist?list=PLFiWaPY4v7LwJKqy5Jpdbq9YdhmgU1ORZ>

8. SAFETY

! Important!

All screws should be hand-tightened! Do not overtighten the screws. Failures due to inappropriate installation void the warranty.

! Important!

The camera must only be installed on a stable surface!

! Important!

For cabling use quality, outdoor-certified cables! Improper cabling causes warranty to void!

! Important!

Water may enter into the camera inside through not properly sealed connectors. To maintain the camera's watertightness please make sure that connected cables are tightened properly and the unused connectors are capped.

! Important!

Seal the unused cable endings (end sleeves) before connecting to power in order to avoid damages due to short circuit!

! Important!

Do not look into the illumination unit directly from close range or for more than 100 seconds. Eyes can be damaged by not taking these precautions.

For detailed information see the User Manual:

<https://adaptiverecognition.com/doc/cameras/vidar-anpr-cameras/vidar-speed-cameras-for-speed-enforcement-and-anpr/>

or

Check our website: <https://adaptiverecognition.com/>

9. MAINTENANCE / STORAGE

The cameras are designed for 24/7/365 work for every weather condition and they do not need special maintenance. Please keep clean the camera front. During the cleaning process, avoid scratching the front cover.

Use only warm, soapy water for cleaning the camera! Some cleaning detergents may damage the camera, so we recommend using only common soap. Avoid to clean the camera with high-pressure water jets!

Instruction for Cleaning Acrylic and Polycarbonate Sheets or Display Cover Glass

Materials Needed:

1. Synthetic microfiber wipes (without any added chemicals).
2. IPA/H₂O* mixture (details provided below).
3. Clean and dry hands or powder-free, disposable silicone rubber or PUR gloves.

**IPA (Isopropanol) and distilled water mixtures in ratios between 30/70% and 70/30%.*

Steps for Cleaning:

1. **Preparation:**
 - Wash and dry your hands or put on disposable, powder-free gloves.
 - Prepare the IPA/H₂O mixture.
2. **Moisten the Wipe:**
 - Lightly spray the microfiber wipe with the IPA/H₂O mixture. (Only 1-2 sprays needed).
3. **Wet Wiping:**
 - Begin cleaning by gently wiping the surface from the center towards the edges using the moistened wipe.
 - Use circular motions to cover the entire surface, moving from the center outwards.

4. Dry Polishing:

- Immediately after wet wiping, use a dry microfiber wipe to polish the surface.
- Apply circular motions from the center outwards to remove any remaining streaks or stains.

5. Repeat if Needed:

- If the surface remains contaminated, repeat the wet wiping and dry polishing process until the desired result is achieved.

Avoid using:

- Do not wash (recycle) wipes using softeners or detergents.
- Do not polish the surface using abrasive materials (glass/ceramic cleaner).
- Do not use regular 'kitchen wipes', as they might produce scratches.
- Non-woven polishing wipes similar to Katrin 45591 (www.katrin.com or ABSORMATTM (www.crtoy.com), is also recommended.
- Do NOT apply any substances that claim to improve surface quality i.e., silicon sprays and 'lotus effect sprays'.
- It is forbidden to use solvents and detergents!

By following these steps, you should achieve a clean, streak-free surface.

Using a shield on the camera is recommended, as it can greatly help to cool the device properly in warm weather.

The cameras should be stored in low humidity environment in temperature range of -30 °C to + 55 °C. Always use the sealing caps on the connectors to keep the camera unit waterproof! If you miss to use it, the warranty will be void! The maintenance of the devices is recommended on a quarterly basis. In case of extreme weather conditions more often.

During the maintenance, make sure that:

- the camera operates properly,
- it is facing to the previously set direction,
- the fastening is not slack,
- the front of the camera and the camera itself is clean (no spider webs or any other contaminants inhibit the visibility),
- there are no strange circumstances (vapor, damage).

10. APPENDIX

10.1. RECOMMENDED POWER SUPPLY

Two types of power supply are recommended, one is an AC230V/AC24V transformer, the other is an AC230V/36V DC power supply. Both are suitable for powering a Vidar camera under suitable environmental conditions.

AC/DC power supply:

Type: Stontronics SRS-75-36

Main features: 75W, Universal AC input 100-240Vac, 36V DC output.

Procurement source: Farnell 3377270

AC/AC transformer:

Type: BREVE PSS 63/230/24V

Main features: 63W, 230Vac input, 24Vac output, 2.6A, IP30.

Procurement source: TME PSS63/230/24V

Protection fuse:

Littelfuse Cartridge Fuses O2183.15MXP

Procurement source: Mouser: 576-02183.15MXP

10.2. CABLE LAYOUTS

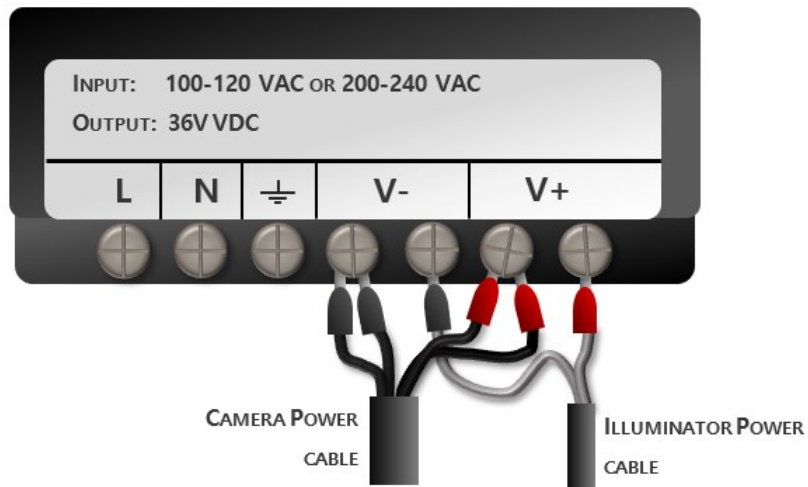
10.2.1. POWER

4 pos. M12 T coded, Male

4 pole Power Connector			
Pin	Wire sleeve color	Function for AC supply	Function for DC supply
1	black	24VAC_1	GND
2	black	24VAC_1	GND
3	red	24VAC_2	+36VDC
4	red	24VAC_2	+36VDC

Pin 1,2 (red wire sleeve) and pin 3,4 (black wire sleeve) are connected inside the camera. Using two wires for each potential allows larger effective cable diameter.

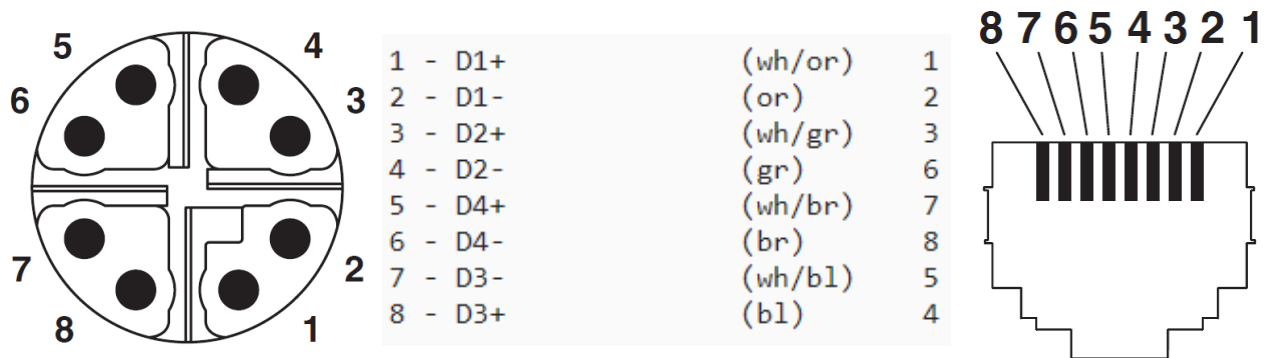
Connecting the 36V DC power supply should be done as per the below wiring diagram:



1. Connect Camera Power Cable black ended sleeve wires 1 and 2 to the power supply (V-).
2. Connect Camera Power Cable red ended sleeve wires 3 and 4 to the power supply (V+).
3. Connect the IR Power Cable black ended sleeve wire to power supply pin 5 (V-).
4. Connect the IR Power Cable red ended sleeve wire to power supply pin 7 (V+).

10.2.2. ETHERNET

(8 pos. M12 X coded, Female) ... RJ45



10.2.3. I/O (12 PIN)

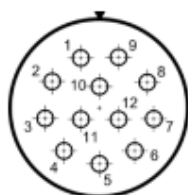
12 pos. M12 A coded, Female

PIN	WIRE	FUNCTION
1	BROWN	OPTO_IO_G (default: OPTO_IN_G)
2	BLUE	TA_USER
3	WHITE	RB_USER
4	GREEN	ILL_STR
5	PINK	USB_GND (USB/UART/PWR GND)
6	YELLOW	USB_D_P
7	BLACK	USB_D_N
8	GRAY	USB_5V
9	RED	SW_12V_OUT
10	PURPLE	OPTO_OUT_S
11	GRAY/PINK	OPTO_OUT_G
12	RED/BLUE	OPTO_IO_S (default: OPTO_IN_S)



10.2.4. SMARTMICRO RADAR:

SENSOR CONNECTOR



View on solder cup side of socket showing the pin numbering (rear view of female counterpart to be connected to sensor)

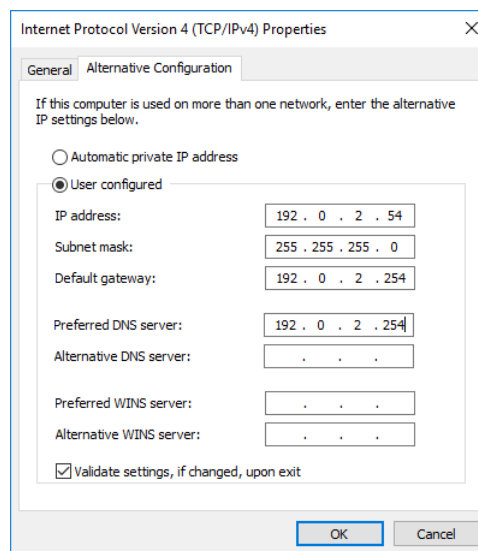
Sensor connector pin out model giving pin descriptions:

Pin No.	Function	Wire Color (MEDI type #KU110C12J002)
1	Sensor Ethernet TX H	Gray / red
2	Sensor Ethernet TX L	Red / blue
3	Sensor RS485 RX L	Pink
4	Sensor RS485 RX H	Gray
5	Sensor RS485 TX L	Brown
6	Sensor RS485 TX H	White
7	Sensor_GND	Blue
8	Sensor_Vcc	Red
9	Sensor Ethernet RX L	Black
10	Sensor Ethernet RX H	Purple
11	CAN H	Green
12	CAN L	Yellow

10.3. ADDING ALTERNATE IP ADDRESS

Windows Vista/Windows 7/Windows 10

1. Click **Start** and select **Control Panel**.
2. Open **Network and Sharing Center**.
3. Click **Manage Network Connections** on the left side of Network and Sharing Center.
4. Click on the network connection you want to add an IP address for (to which the camera has been connected) and select **Properties**.
5. Select **Internet Protocol Version 4(TCP/IPv4)**, click on **Properties** and select the **Alternate Configuration** tab.
6. Select **User configured** and enter e.g. the **192.0.2.54 IP address** and **255.255.255.0** as **Subnet mask** as shown on *Figure 1*.
7. Click **OK** in the opened windows.



Linux

1. Open a terminal.
2. Enter the ifconfig command to see the reserved Ethernets (e.g. eth0).
3. Enter the following command: `ifconfig ethY 192.0.2.25` where **Y** is a free eth (e.g. eth1) and 192.0.2.25 is a sample IP address.

10.4. MAGNETIC RESET

These menu entries restart the camera in normal or in recovery mode. If the web interface is not functional (for example due to a lost IP), Recovery Mode may also be entered applying the magnetic reset procedure.

The **magnetic reset procedure** is as follows:

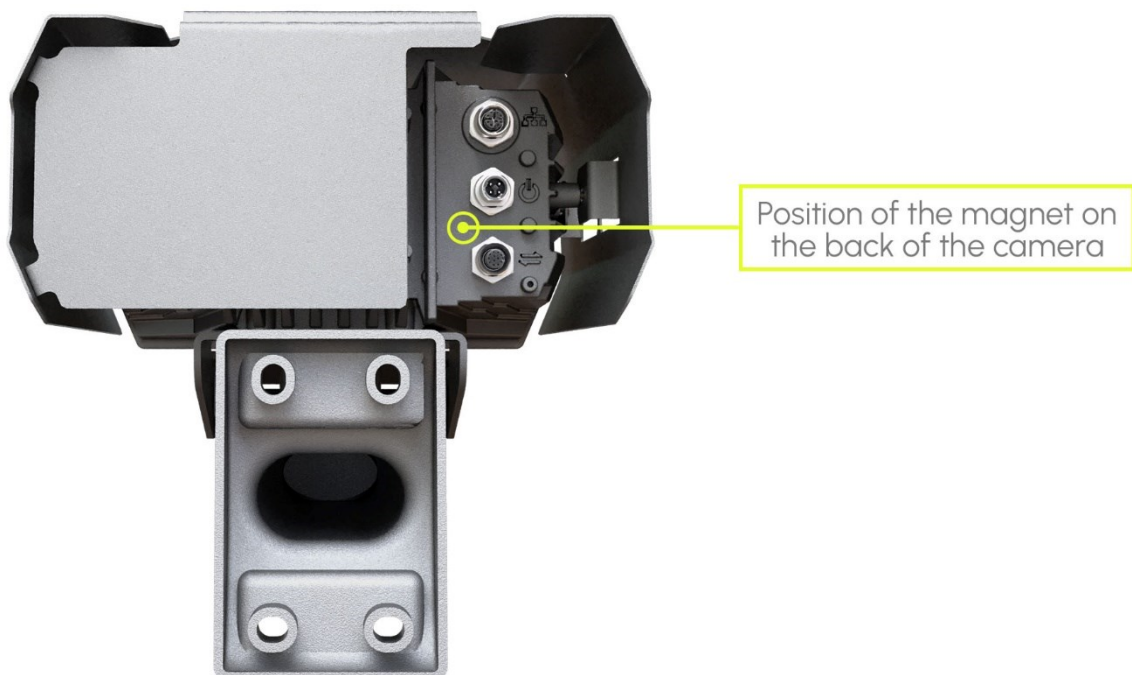
- Start with a powered off device.
- Place a magnet at the indicated position
- Power on the device (if the magnet is in proper position, the green indicator led on the front of the camera will start flashing very fast)
- Remove the magnet
- Enter the web interface at the 192.0.2.3 (default) IP

Entering Recovery mode to Vidar camera:

Starting of the Recovery mode can be implemented by magnetization in the following way:

By magnetization:

1. Power off the camera.
2. Touch a magnet (not included) to the back of the camera and hold it in position. See figures below.
3. Power on the camera and wait 5 seconds. If the magnet is in proper position, the green indicator led on the front of the camera will start flashing very fast.
4. Remove the magnet.
5. Reach the camera via its default (192.0.2.3) IP address.



The recommended strength of the magnet is 1210 mT (millitesla).

10.5. POSITION OF THE STICKER

Sticker is placed on the bottom of the device.

Note

The sticker, indicating the Name, IP address, MAC address and the Serial Number of the camera, can be found on a small metal placket at the bottom of the camera.

CAUTION!

The device is equipped with an infra led illumination unit. The human eye will not or slightly see this light coming from the LED's. Do not look into the illumination unit directly from close range or for more than 100 seconds. Eyes can be damaged by not taking these precautions.

10.6. COMPLIANCES

CE Certificates:

The AR FreewayCAM4 ANPR digital camera (VIDAR) family complies with the European CE requirements specified in the EMC Directive 2014/30/EU.

The ANPR cameras conform to the following Product Specifications:

Emission and Immunity:

EN 55032:2015, EN 55024:2010+A1:2015

Declaration of RoHS Compliance for Electrical and Electronic Products:

Adaptive Recognition Hungary ("the Company") hereby declares that the VIDAR ANPR camera family placed on the European Community market by the Company after 1st July 2006 are compliant with EC Directive 2002/95/EC on the Restrict of Certain Hazardous Substances in Electrical and Electronic Equipment (commonly known as the EU RoHS Directive.)

Compliance with RoHS means that where the product falls under the scope of the EU RoHS Directive, the product does not contain the following substances:

- Mercury (Hg) 0.1%
- Lead (Pb) 0.1%
- Cadmium (Cd) 0.01%
- Hexavalent Chromium (Cr+6) 0.1%
- Polybrominated Biphenyls (PBB) 0.1%
- Polybrominated Diphenyl Ethers (PBDE) 0.1%

above the indicated maximum concentration values by weight in homogeneous materials unless the substance is subject to an exemption specified in the Directive or in subsequent Commission Decisions.

This declaration represents the Company's best knowledge, which is partially based on information provided by third party suppliers.

Laser safety compliance:

All models of VIDAR ANPR camera which are equipped with a measuring laser module are Class 1 laser products according to the IEC 60825-1:2014 standard.





The FCC declaration of conformity

47 CFR PART 15 SUBPART B

VIDAR

FCC statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

This device may not cause harmful interference, and

This device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Changes or modifications not expressly approved by the manufacturer responsible for compliance could void the user's authority to operate the equipment.

Warning: Where shielded interface cables or accessories have been provided with the product or specified additional components or accessories elsewhere defined to be used with the installation of the product, they must be used in order to ensure compliance with FCC. Changes or modifications to product not expressly approved by Adaptive Recognition Hungary could void your right to use or operate your product by the FCC.

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Adaptive Recognition Hungary Technical Support System (ATSS) is designed to provide you the fastest and most proficient assistance, so you can quickly get back to business.

Information regarding your hardware, latest software updates and manuals are easily accessible for customers via our [Documents Site \(www.adaptiverecognition.com/doc\)](http://www.adaptiverecognition.com/doc) after a quick registration.

New User

If this is your first online support request, please contact your sales representative to register you in our Support System. More help [here \(www.adaptiverecognition.com/support/\)](http://www.adaptiverecognition.com/support/)!

Returning User

All registered ATSS customers receive a personal access link via e-mail. If you previously received a confirmation message from ATSS, it contains the embedded link that allows you to securely enter the support site.

