



COLUMN camera

BOX camera

ACCESS CONTROL

DATASHEET

izero™



ACCURACY: up to 99.8% even in critical conditions.



EASY to install and configure (plug & play).



PoE: 12 Volt and Power over Ethernet 802.3at power supply.



Number plate reading camera (ANPR-OCR), available in column and box version, for vehicle access control applications. Suitable for hotels, campsites, residential complexes, parkings, shopping malls, airports, exhibition centers and company car parks.

■ CAMERA

Camera with OCR number plate reading sensor CMOS Global Shutter, **2 Megapixels**, frame rate 54 Fps, B/W fitted with 3.6 mm fixed lens and M12 mount.

■ ANPR-OCR

Triple OCR algorithm embedded directly into the camera that can read number plates automatically (free flow) i.e. without the need for external synchronisation devices. It should be remembered that unlike other systems, Selea character reading cameras **are not based on** imprecise motion detection systems. The number plate can also be read even when the vehicle is stationary (0 Km/h = no motion detection).

The OCR recognizes the characters of the Latin alphabet and some of the Arabic alphabet (Iran-Iraq, Morocco, Turkey and others). The camera is able to recognize the *nationality* of the vehicle without having to work with syntax limitations or constraints of syntax libraries of over 28 Member States of the European Community such as: *Austria, Belgium, Bulgaria, Cyprus, Croatia, Denmark, Estonia, Finland, France, Germany, Greece, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, the United Kingdom, the Czech Republic, Romania, Slovakia, Slovenia, Spain, Sweden, Hungary and non-EU countries such as Albania, Azerbaijan, Belarus, Bosnia and Herzegovina, the Vatican City, Florida, Georgia, Iceland, Kazakhstan, Kosovo, Macedonia, Moldova, Monaco, Montenegro, Nigeria, Norway, San Marino, Serbia, Switzerland, Turkey, Ukraine*, as well as character sets from countries such as Canada, Iran, South Africa and others, for a total of **over 50 countries**. The camera can work both with and without syntax and *without losing accuracy* when switching from one mode to another. In syntax-free mode, the camera offers the advantage of having no nationality limits, apart from constraints imposed by the character sets that the OCR is able to recognise. You can choose between operating modes that use syntax, which is useful where a well-defined syntax exists (such as in Italy) - and that don't use syntax (syntax free) like in most European countries, without the loss of reading accuracy.

The system recognises a wide range of vehicle types from cars to goods vehicles, mopeds and motorcycles, Law Enforcement vehicles, Military vehicles and Ambulances. It can read both front and rear number plates. Reading accuracy of up to 99.8% in various environmental conditions.

■ EMBEDDED ALGORITHMS

In addition to the OCR, other algorithms are installed on this camera model, that have been developed to make number plate reading as reliable and as error-free as possible, such as:

- *Dirt elimination*: to eliminate issues associated with dust, snow, mud and insects on the body of the number plate.
- *Angle compensation*: to allow readings to be taken even at sharp angles.
- *Symbol elimination*: such as labels, badges, symbols or advertising.
- *Predictive character analysis*: probability based, to improve reading accuracy.
- *Magic spot*: which makes the number plate visible even if the image is dark.

■ SECURITY AND PRIVACY

The stored data is encrypted to emphasize the importance Selea has placed on data protection to comply with GDPR regulations. Data and image security are ensured by:

- HTTPS encryption.
- FTPS (FTP over TLS/SSL) encryption.
- Micro SD memory encryption.
- Automatic deletion of data and images after specified period of time (privacy management).

STANDARD BUILT-IN FUNCTIONS

This camera, with embedded Linux OS, has the following built-in functions:

- Double FTP server and double IP notification server.
- Dynamic FTP notification forwarding customization.
- IP notification customization.
- Multiple user management using HTTPS protocol protected access credentials for accessing the camera.
- List management (white/black list, no list) with independent actions for each list: function available only for the FULL version.
- Synchronized recording of metadata and captured code/number plate image.
- Integration and saving of context camera images.
- Privacy management with automatic deletion of image data after a specified period of time.
- Integration with third party VMS video surveillance software solutions.
- Save data on a local server or remote NAS.
- HTTPS security management.
- FTPS (FTP over TLS/SSL) security management.
- E-mail forwarding security using TLS/SSL protocol.
- Multiple action alarm management.
- Live and check control function for checking the operation of the entire system.
- Possibility of updating firmware from a web page.

ACCURACY

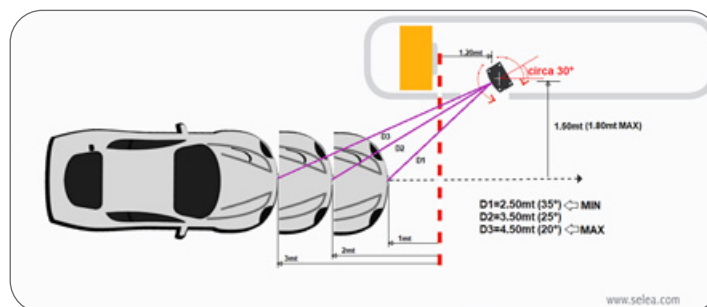
Unlike other systems, the SELEA cameras character reading **does not depend** on the activation of the motion detection system. So the camera can read when a vehicle is stationary.

In the field, Selea guarantees an accuracy of:

- up to 99.8% on number plate reading with the vehicle stationary for a standard installation: Box/Column of up to PAN $\leq 30^\circ$. For the Box version TILT $\leq 25^\circ$; H=1.5m max.
- up to 99% of number plate reading transits at up to 20 km/h for a standard installation: PAN $\leq 30^\circ$.

INSTALLATION

For reading plates on a single lane, the system will work best when it is set up to read number plates at a distance (D) of more than 2 m and less than 4 m (3 meters recommended). For the Box version, it is recommended to install it at a height no greater than 1.5 m. The width of the access should be a maximum of 3.5 m for both versions.



INTERNAL MEMORY

The FULL version camera is fitted with an internal 8 GB (16 GB optional) *High Endurance* (-40°C ~ + 85°C) industrial microSD SLC memory card as standard, which is used for entering number plates (white/black list) and for saving the captured images. When the memory is full, the camera will automatically delete the oldest files to free up space for the new ones (Fi.Fo method). If the data connection is lost, the camera automatically stores all transits locally. When the connection is restored, the camera automatically updates the operations centre database. The memory can be expanded using the USB interface provided to connect storage disks of the capacity currently available on the market ($\leq 1\text{TB}$ optional).

■ VIDEO OUTPUT

The camera is able to send images of the number plate in JPEG format and as a video stream from the number plate reading sensor in RTP/RTSP, Mpeg4 and H264 video formats.

■ IR ILLUMINATOR

The camera is fitted with an IR illuminator consisting of 6 high power 820 nm/47° IR LEDs that are compliant with the EN62471:2008 standard on photobiological safety. The multiple exposure pulsed lamp is able to regulate the output power according to the lighting in the environment and the reflectance of the number plate. This avoids underexposed or overexposed images, which improves number plate reading and recognition accuracy.

■ DATA INTERFACE

The camera is a web-server device, i.e. a device that allows the images to be viewed, the memory to be accessed and the parameters to be configured via a browser. It is fitted with a 10/100 Mbps standard 802.3 Ethernet/IEEE port and uses well known standard communication protocols such as TCP/IP, UDP, HTTP, HTTPS, FTP, FTPS, RTP/RTSP and DHCP. In addition to the LAN interface, the FULL version camera also has a serial interface such as RS232, RS485 half duplex, Wiegand and OSDP.

■ DATA COMMUNICATIONS

- Save data directly to local server or remote NAS.
- Integration with third party VMS software solutions.
- Synchronized recording of metadata and captured number plate image.
- Dynamic creation and updating of multiple lists (black/white): only for the FULL version.
- Multiple action alarm management.
- Double (triple on request) FTP and/or TCP/IP server.

■ I/O, INPUTS-OUTPUTS

The FULL camera (COLUMN or BOX version) is fitted with 0.3A 125 Vac or 1A 30 Vdc volt-free contact relays for opening the barrier/gate automatically. It also has 2 digital inputs for synchronization devices, if required.

■ INBUILT PROTECTION

The camera is protected against:

- reverse polarity.
- voltage fluctuations greater than 30 Vdc.
- overloads with thermal protection.
- overvoltages (TVS) on USB and Ethernet ports.

■ POWER SUPPLY

The camera is designed to use a 12 Vdc power supply. The FULL version has the option of being POE 802.3at powered, or powered using a built-in 230 Vac power supply for the column version. The absorbed power for all models is 8 W max.

■ GENERAL

The camera is made of die-cast aluminium with an ABS weather-shield. It can operate in temperatures from -25°C to +45°C without the need for fans or heaters. Protection rating IP66.

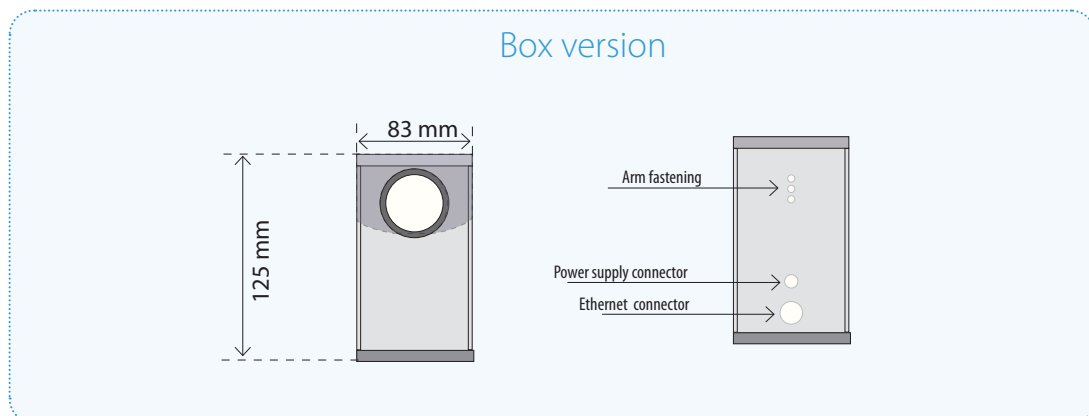
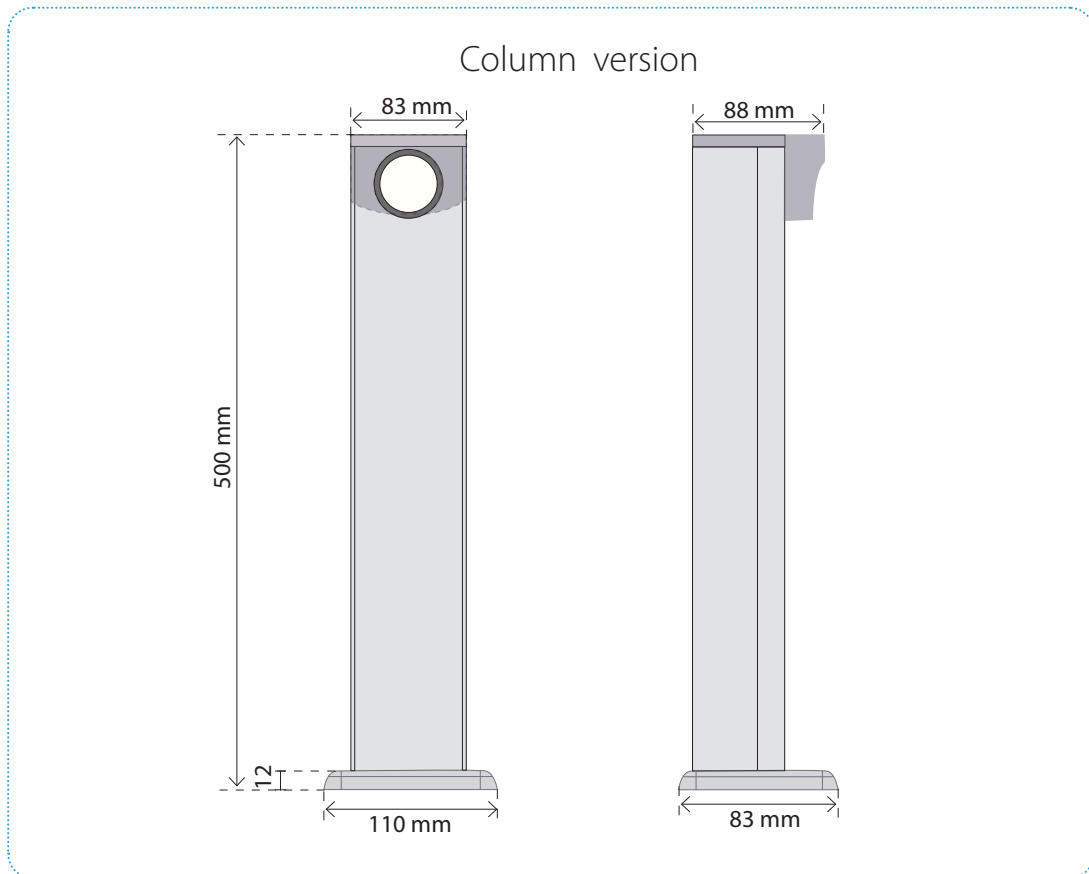
Its dimensions are:

- COLUMN camera: L=83 H=500 D=88 mm - Weight: 1.8 kg.
- BOX camera: L=83 H=125 D=88 mm - Weight: 0.9 kg.

ACCESSORIES

The COLUMN camera can be equipped with the following accessories:

- A** ▶ 230 Vac built-in power supply.
- O** ▶ RS485 interface with standard OSDP protocol for the integration with long distance access control solutions. Available only for E-IZEROFUC model.



iZERO

99,8%
accuracy



OCR Column



OCR Box

COMPARISON TABLE showing the main differences

| Key ● = included (built-in) ○ = optional (on request) | TARGA | TARGA | iZERO | | | |
|---|------------------------------------|----------------------|----------------------|-------------|-----------------|----------------|
| | 512 | 504 | BOX Entry | BOX Full | COLUMN Entry | COLUMN Full |
| Built-in OCR sensor | CMOS Global Shutter - 2 Megapixels | | | | | |
| Standard OCR lens - (mount type). FF=fixed focus; VF=varifocal | 8/16 mm - (CS) FF | 5-55 mm - (CS) VF | 3.6 mm - (M12) FF | | | |
| Additional context sensor | | ○ | | | | |
| MicroSD internal memory for backup and white list | ● | ● | | ● | | ● |
| Memory expansion ports for up to 1 TB | ● | ● | | | | |
| RS232-485 interface | ● | ● | | ● | | ● |
| Wiegand interface | ○ | ○ | | ● | | ● |
| OSDP interface (Siemens) | ○ | ○ | | ○ | | ○ |
| PoE+ power supply | | ○ | | ● | | ● |
| Power supply 230 Vac | | ● | | | ○ | ○ |
| Power supply 12 Vdc | ● | | ● | ● | ● | ● |

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WHERE TO BUY

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SUPPORT

We provide both a pre-sales and after-sales technical support service to customers.

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About us

SELEA is specialized in the manufacture of number plate reading solutions, both for vehicle access control and for territorial security and traffic control. All of our products are developed and manufactured entirely in Italy. This means that our customers benefit from continuous and comprehensive technical support.

The experience accumulated in over 10 years of collaboration with various law enforcement agencies on video surveillance and license plate reading systems, give us today the opportunity to offer solutions capable of guaranteeing excellent results, and advanced tools for the **repression and prevention of crimes** (search for accomplices, stolen vehicles, vehicles without insurance/roadworthiness certificate, traffic analysis, and much more). These products can be part of an integrated urban security system, allowing the sharing of information between law enforcement and smart cities.

- **HARDWARE MANUFACTURING**
- **SOFTWARE DEVELOPMENT**
- **IN-HOUSE RESEARCH & DEVELOPMENT**
- **100% MADE in ITALY by SELEA**

