



## VTR Series High Intensity LED Strobe Lights

### Solid state solutions for ANPR/LPR

The Gardasoft VTR lights provide very powerful LED strobe illumination for traffic monitoring applications including:

Automatic number plate recognition, Red Light Violation, Open Road Tolling and Weigh-in motion systems.

- Choice of IR Wavelengths
- 2kW, 3.5kW and 4.5kW Pulse Drive options
- 12V DC option
- Compact IP66 enclosures
- Bespoke versions on request

#### High Power, Single Housing

Using the latest high power LED technology the VTR series is a range of illuminators delivering up to 4.5kW to the LED array. It is fully integrated with internal timing, intensity control, trigger input and long distance communications.

The VTR Series can optionally be operated in a free-running mode from a programmable internal timer. A trigger output signal is available to synchronise cameras. The compact housings are IP66 rated allowing the lights to be installed in harsh environments.

#### Range of Wavelengths

The VTR lights are available in a range of wavelengths and beam angles to match applications with their unique imaging requirements. IR wavelengths for non-invasive applications; White light plus other visible wavelengths are available when specific or additional vehicle/driver details are required.

#### Very Low Maintenance

Lighting for ANPR lighting is typically installed in inaccessible locations and can therefore be expensive to repair or replace. LED technology has a much longer lifetime than traditional filament bulb or xenon based solutions. Only low voltages are used, removing electrical safety issues during maintenance.

#### Trigger input

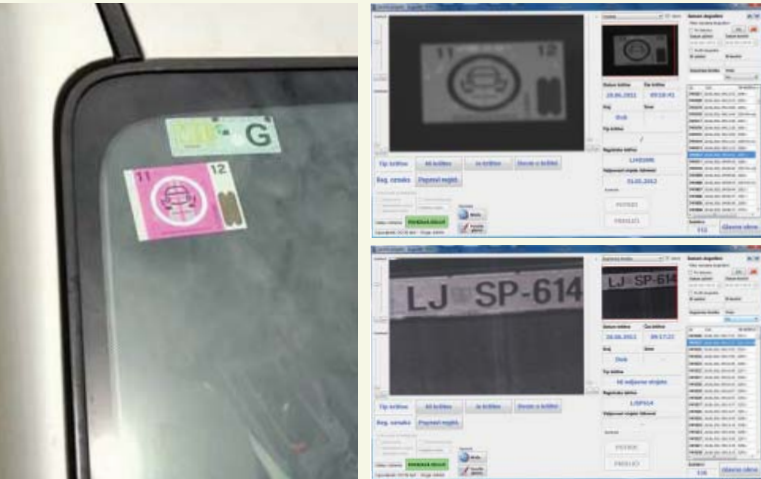
A trigger input can be used to synchronise the lighting pulse with the exposure of a camera. Full intensity and pulse width control are available through the trigger input and remote communications port.

#### Trigger output

A trigger output function is also available and this is useful in situations where an input from a road sensor, for example, needs to be de-bounced and cleaned up in the VTR, and a refined signal sent to the trigger camera.

# VTR Series Models

## VTR Series - ANPR application examples



### Open road tolling

#### Application overview

In many countries, window sticker licences are commonly used on motorways with automated tolls. For example, the VTR2 was utilised in an application in Slovenia, where passes are available on a weekly, monthly or yearly basis. The original method of checking validity was by manual Police checks.

#### Application solution

A fully automated solution was deployed that reads both the vehicle licence plate and its pass sticker on the windscreen - checking cars 24 hours a day, 7 days a week, with no restriction in traffic flow.

VTR series lights are used in similar applications including the detection of authentic and counterfeit screen passes where the high intensity Infrared characteristics of the VTR series are proving very effective.



### Multi-lane operation

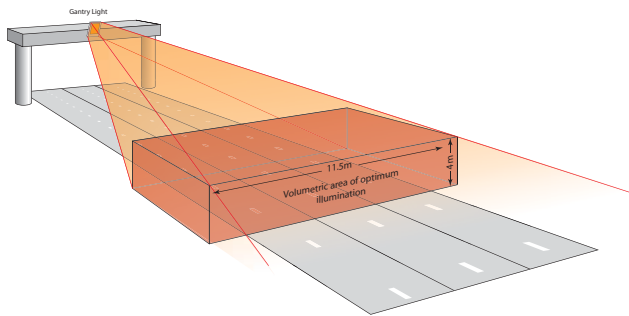
#### Application overview

It is becoming important for lighting for Intelligent Transport Systems to offer the ability for multi-lane operation. In a recent project single VTR series LED lights were each required to cover three lanes, where each lane has a dedicated camera, each light accepting a trigger from one or more cameras.

#### Application solution

The working distance of the lights was 20m. Gardasoft offered the option of custom beam arrangements, and for this project the beam geometry was changed to give a 32 degree beam in the horizontal axis and 12 degrees in the vertical axis.

To enable the synchronisation with the cameras, three TTL trigger inputs were configured on the VTR light so any of the cameras could trigger the operation of the VTR light.



### Mobile and Public transport

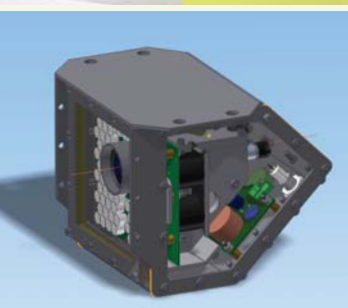
#### Application overview

Advances in LED Lighting is such that the technology is being used in numerous standard and custom applications. These specials can take a number of forms including fixed position applications such as gantry lights with extra heat sinking and control circuitry to modify the way the lights operate.

VTR Series LED lighting can also be used for mobile illuminations where they can be mounted on tripods by the side of the road, or designed to be mounted on a vehicle. Typical applications include Emergency Services and Public Transport.

#### Application solution

Gardasoft have a dedicated Custom Design Programme (CDP) which is designed to enable the effective development of special LED lighting for OEMs. Importantly, the CDP delivers these custom versions in a very competitive timeframe for the OEM.





## VTR Series – a complete range

The market for Intelligent Transport Systems (ITS) is developing at a rapid pace; the VTR Series of illuminators offers this market a range of high intensity solid state lighting solutions to meet the ever increasing demands of ANPR/LPR image acquisition.



### VTR2

#### Compact, high intensity ANPR Illuminator

- Choice of Wavelengths including White, 740nm, 850nm and 940nm
- Up to 2kW Pulse Drive Power
- 12V DC option
- Compact IP66 enclosure



### VTR4

#### Industry standard ANPR Illuminator

- Choice of Wavelengths including White and IR (other wavelengths upon request)
- Up to 3.5kW Pulse Drive Power
- 12V DC option
- Compact IP66 enclosure



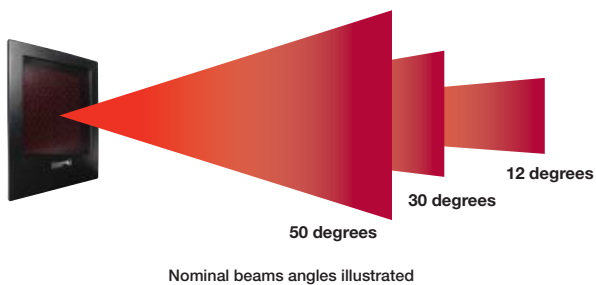
### VTR6

#### Highest power Traffic Illuminator

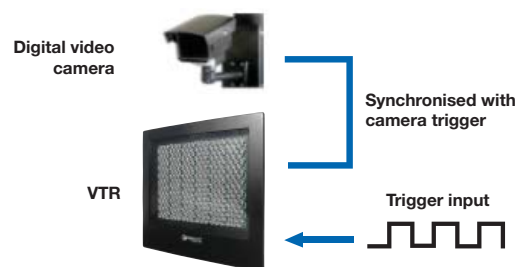
- Choice of Wavelengths including White and IR (other wavelengths upon request)
- Up to 4.5kW Pulse Drive Power
- 12V DC option
- Compact IP66 enclosure

## VTR Series Application Characteristics

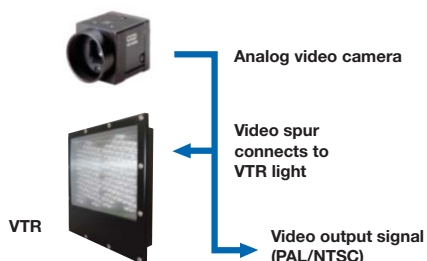
### Beam angles



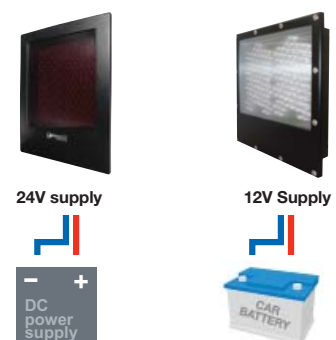
### Triggering



### Analogue video



### 24V or 12V DC supply



**OTHER VTR SERIES PRODUCTS**

**VTR1 Compact ANPR LED Illuminator**

500w power output, ideal for smaller scale and mobile applications. Fast repetition rate, and IP66 enclosure for outdoor installation.



**VCT Custom ANPR LED Illuminators**

Utilises the concept of the highest power VTR LED Illuminators within custom housings to OEM and System Integrator requirements.



For more information on the VTR1 and VCT refer to [www.gardasoft.com](http://www.gardasoft.com)

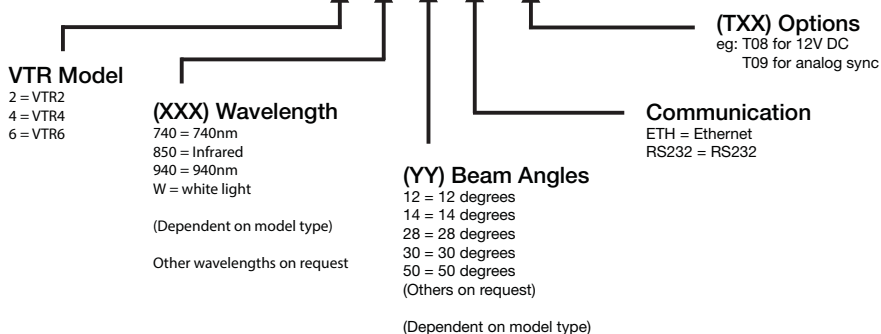
**SPECIFICATIONS**

Parameter	VTR2				VTR4		VTR6	
Wavelength	White, 740nm, 850nm, 940nm							
Pulse width timing control	Precise internal timing generation or external control							
Maximum pulse width	3ms				2ms			
Maximum trigger frequency	10kHz				5kHz			
Maximum duty cycle at 100% intensity	2% (850nm), 1% (740nm, White)				0.5% (White), 1% (850nm)			
Full beam angle (FWHM at 70% power)	12 or 30 degrees Other angles optional				White: 12 or 28 degrees IR: 14 or 28 degrees			
Lighting drive power (pulsed)	White	740nm	850nm	940nm	White	850nm	White	850nm
	2052w	1296w	1210w	1210w	3240w	3360w	4320w	4480w
Brightness repeatability	±1%							
Power supply requirement	24V DC ± 5%, 3.2A				24V DC ± 5%, 5A		24V DC ± 5%, 8A	
Dimensions (excluding cable entry and studs)	246mm (w), 256mm (h), 50mm (d)				334mm (w), 431mm (h), 56mm (d)		444mm (w), 431mm (h), 56mm (d)	
Trigger input	5V to 24V opto-isolated with spike filtering							
Trigger output	Programmable frequency, delayed or advanced camera trigger (24V, 20mA, opto-isolated)							
Control/Communication	Ethernet or RS232							
Operating temperature	-20°C to +60°C							
Storage temperature	-20°C to +80°C							
Weight	2.7Kg				5 Kg		6 Kg	
Environment protection	IP66, weatherproof cabling							

**ORDERING INFORMATION**

**VTR(N) Part Number Format**

**VTR(N)-XXX-YY-ZZZ-TXX**



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