



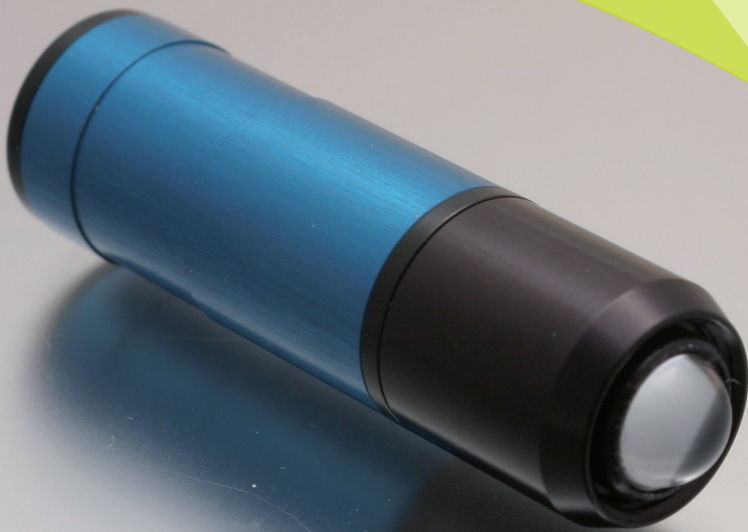
Synchronous Detector

Synchronous Detector

As an addition to Global Laser's Detector Range, and designed to compliment the modulatable range of laser modules, the Synchronous Detector provides a 5V switched output to create an easy to use beam break system.

Complete ambient light rejection is achieved by only detecting light modulated at a particular frequency, all other light is rejected. Furthermore for ease of use the detector provides this signal as an output in order to modulate the laser to ensure a perfectly matched system. Upon detection and indicated by an LED illumination at the rear of the module a second output switches from a TTL logic level High to Low for simple system integration.

The modular design with a front screw thread allows for both clamp and screwed mounting facilities, to match both the Premier and Gated Cameo arrangements. Integrated hemispherical optics allow for a wide 160° angle detection to further enhance detection and mounting capabilities where direct projection is not possible or distance increases laser spot size.



Features

- Designed to compliment Global Laser's TTL level modulatable range of lasers including the Gated Cameo, Premier and Acculase variants.
- Low power 5Vdc and low current operation
- Detection of only modulated light of a particular frequency
- High ambient light rejection
- Output signal from the detector to modulate the laser at the detection modulation frequency
- Acceptance of light modulated from a matched external source for conditions where wire connection is not possible.
- TTL level DC output
- Visual Detection Indicator
- Wide Angle Detection 160°
- Screw thread for easy mounting

Applications

Event Monitoring - Security Systems, edge sensing, counting, interlocks

Condition Monitoring – Set level smoke and fog detection, Movement/Level Detection

Mounting Options

Heavy Duty Mounting Clamp

The optional heavy duty mounting clamp allows the Synchronous Detector range to be securely fixed at any required direction or angle. The base plate has a series of threaded holes which allows the clamp to be fixed directly onto a machine or workbench.

Magnetic Mount

A magnetic base is also available which allows the heavy duty clamp to be magnetically attached to a ferrous surface, negating the need for any mounting holes.

Swivel Mount Clamp

The optional lower cost swivel clamp allows the Synchronous Detector to be mounted securely. It offers the user up and down movement as well as + 45° swivel. The base plate has a series of holes which allows the clamp to be fixed directly onto a machine or workbench.



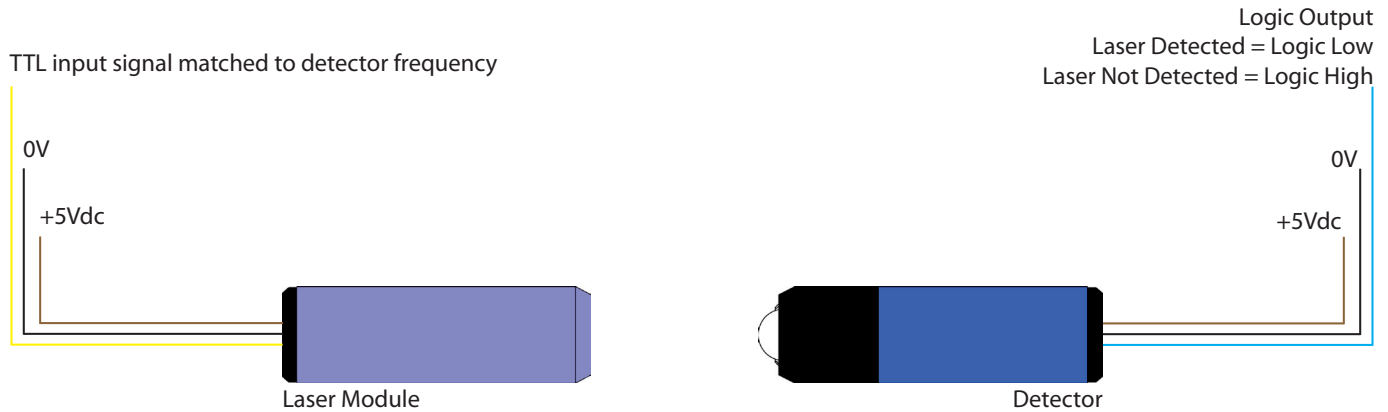
Specifications

	Min	Typ	Max	Units	Note
Electrical Characteristics					
Supply Voltage		5		V	
Supply Current	4		25	mA	(A)
Mechanical Information					
Modulating Frequency		10		KHz	Call for Alternative frequencies
Modulating Duty Cycle		50		%	Call for Alternative Duty Cycles
Modulation Amplitude (p-p)		5		V	
System Response			3	ms	
Mark to Spatio Ratio		1:1			
Trigger Level	40			uW	
Output Signal Level	0		5	V	(B)
Input Acceptance Angle			160	°	
NOTES All specifications are typical @ 25°C Note A - Minimum current when no laser light on detector, maximum current when laser light is falling on detector. Note B - Output at 5V dc without laser light, 0V dc with laser light.					

Operation

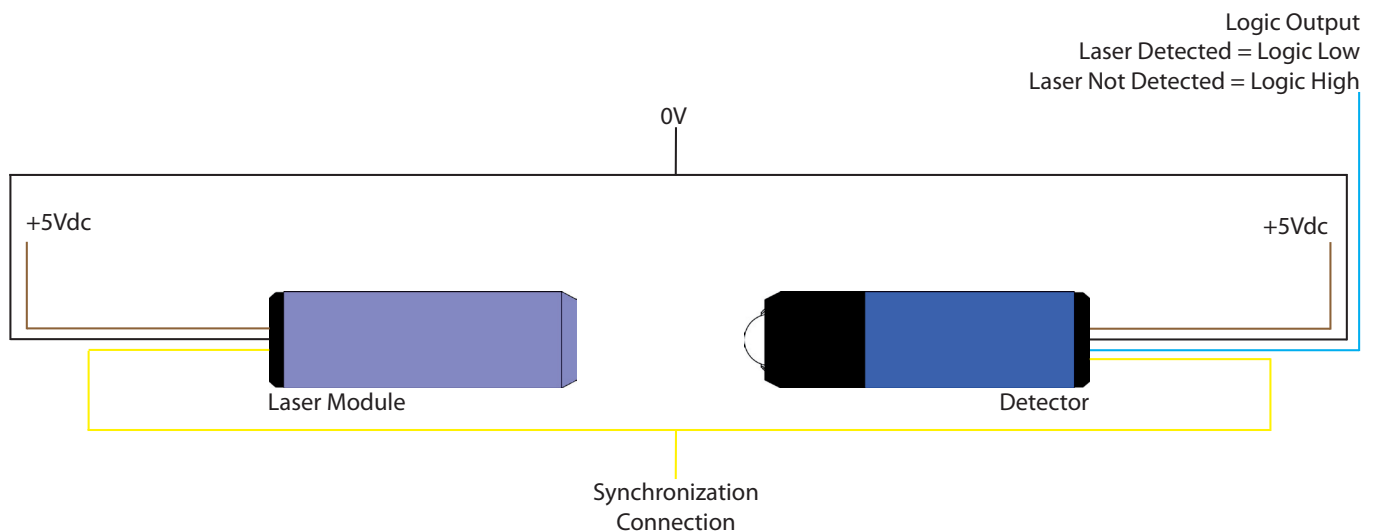
The detector achieves its immunity to ambient light by only detecting light of a preset frequency. The system can be set up in one of two ways:

1) Modulating the laser with an external source matched to the detector signal.



2) Modulating the laser with the output of the detector by connecting the detector and laser third pins (yellow wires) together, the ground references should also be common.

Detection of the specified laser light can then be seen by the illumination of the LED situated at the rear of the unit and can be viewed via the "signal out" pin 4 (blue wire).



Pin Configuration

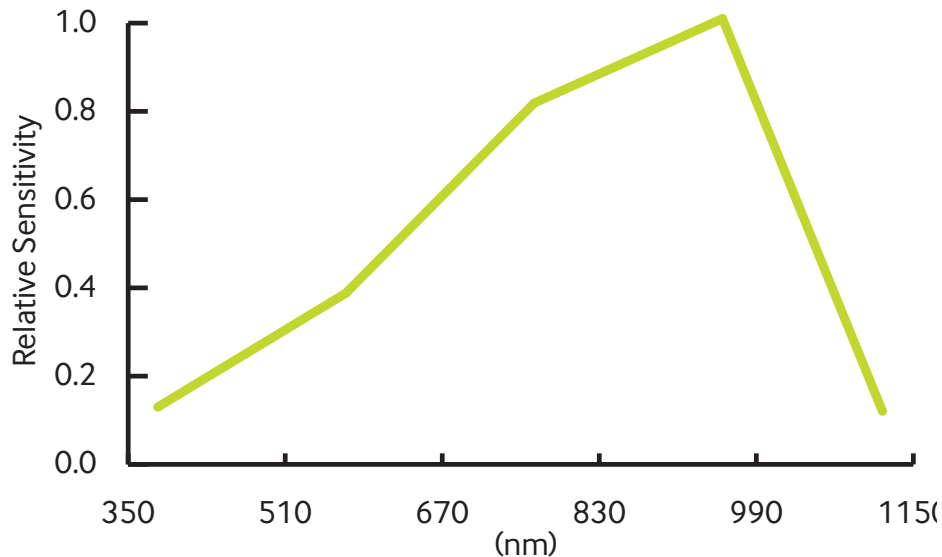
Detector		
Pin No	Wire	Connection
1	Red	+5V
2	Black	0V (Note C)
3	Yellow	Laser Pin 3 (Yellow Wire)
4	Blue	Signal Out
Connection to Laser		
1	Red	+5V
2	Black	0V (c)
3	Yellow	Detector Pin 3 (Yellow Wire)
4	Blue	Enable (when applicable)
Note C - 0V (Pin 2) of both laser and detector must be common		

With the 3rd pins (yellow wires) of the detector and Laser connected together suggested by the pin configuration above, the laser is modulated at a frequency determined by the detector. The detector is immune to light of any frequency other than that of the laser resulting in total ambient light rejection. Detection of the specified laser light can be seen by the illumination of the LED situated at the rear of the unit and can be viewed via the “signal out” pin 4 (blue wire).

If an external source is used to modulate the laser, the 3rd pin of the Synchronous Detector can be left floating.

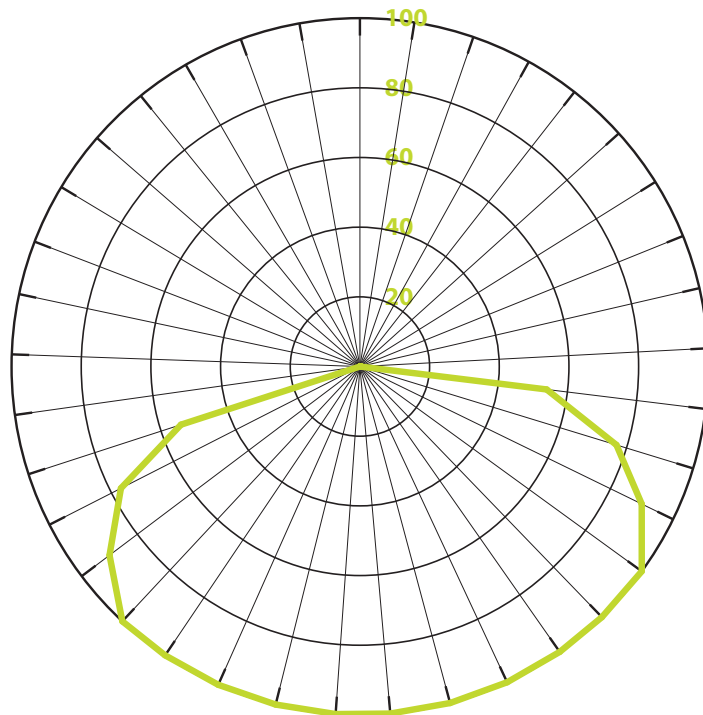
Relative Sensitivity

The profiles below show the sensitivity of the Hawkeye Synchronous Detector and different wavelengths.



Input Acceptance Angle

The profiles below show the input acceptance angle of the Hawkeye Synchronous detector

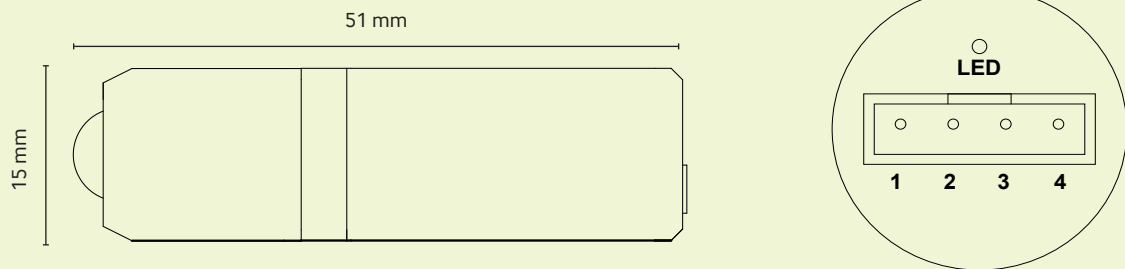


Quality & Warranty

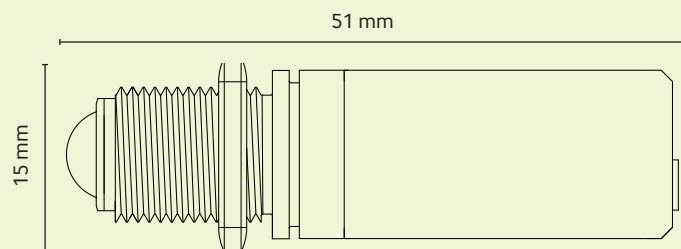
The Synchronous Detector is supplied with a 12 month parts and labour warranty. Our manufacturing operations are certified to ISO9001.

Mechanical Dimensions

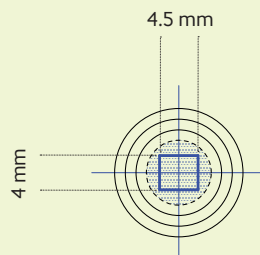
Hawkeye Synchronous Detector



Hawkeye Synchronous Detector with Front Sleeve Removed



Sensitivity Area



Please Note: Global Laser reserve the right to change descriptions and specifications without notice.



ISO9001 Certified

T: +44 (0)1495 212213
F: +44 (0)1495 214004
E: sales@globallasertech.com
www.globallasertech.com

Global Laser Ltd
Unit 9-10
Roseheyworth Business Park
Abertillery, Gwent NP13 1LZ UK