

## VISualize – broad band visualization of visible and IR lasers & laser diodes

Safe and convenient alignment of laser and laser diode modules is an essential task in laboratories, telecom's and manufacturing plants throughout the world. Advances in materials processing have allowed AST to develop the Visualize series of products – optimised for individual applications.

### Background

Infra-red lasers and laser diodes are in routine use in a wide range of applications including telecoms and scientific instruments.

Lasers aligned routinely and it is essential that this is carried out in a safe manner – particularly regarding eye hazards. Use of laser safety goggles also renders normally visible lasers invisible – causing difficulties in alignment.

### The Applied Scintillation Technologies Solution

AST's, VISualize product has the broad band response required to provide a flexible solution in the visible and infra red wavelength regions making it a key tool in laboratory and industrial applications.

As a general safety tool it is ideal for inspection of visible laser sources such as argon ion, HeNe, and laser diodes when laser safety goggles are being worn.

- ◆ Gives orange/red emission.
- ◆ Active in visible bands including HeNe, HeCd, doubled Nd:YAG
- ◆ Active in popular laser diode, Nd:YAG and communications wavelength bands.
- ◆ Detects IR at powers as low as **1 nW/cm<sup>2</sup>**
- ◆ **Free** from hazardous reflections.
- ◆ A low cost alternative to beam profilers.

### Product Styles

The VISualize product comes in 3 formats:

- ◆ **Laminated "credit card" style** - budget format suitable for low power lamp and laser use
- ◆ **25mm disc and clip-on wand** - specifically designed for laser engineers and optics experimentalists where frequent component positioning is required
- ◆ **Optical bench mounted head** - rugged, 40mm active area, free standing 13.7 mm mounting post and post holder allowing centre adjustments from 90 – 235 mm. Ideally suited for laser alignment component positioning and beam profiling – complete with alignment target.



AST's Visualize product range

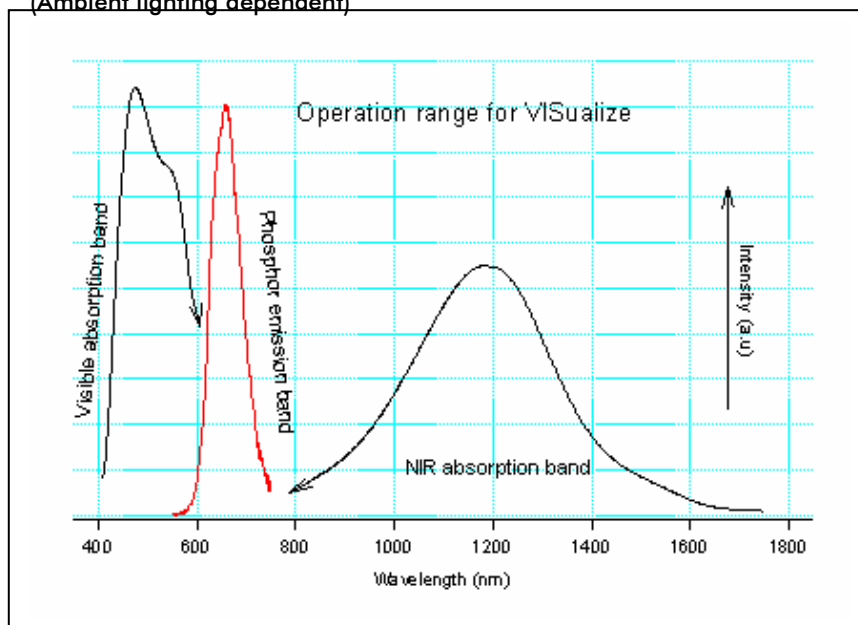
### Product Style Information

- ◆ **Credit Card Style**  
Dimensions 86mm x 54mm  
Active area ~4.5 cm<sup>2</sup>
- ◆ **Disc + Wand**  
Disc OD 25 mm  
optical mount compatible  
Active area ~3 cm<sup>2</sup>
- ◆ **Optical Bench Mounted Head**  
Head OD 70 mm  
Depth 8 mm  
Post dia 12.6 mm  
  
Active area ~12.6 cm<sup>2</sup>

## Performance Specifications

- ◆ Stimulation Range: (see graph)
  - Band 1: <400 nm to 640 nm
  - Band 2: <800 nm to >1700 nm
- ◆ Typical Applications
  - Band 1: Ar<sup>+</sup>, HeNe, HeCd, Nd:YAG etc
  - Band 2: NIR LEDs, LDs, Nd:YAG etc
  - 1550 nm telecommunications
- ◆ Emission Colour: (see graph)
  - Orange/redcentred @655 nm
  - Broad band emission 600 nm to 730 nm (10% values)
- ◆ Persistence (stimulation removed)
  - IR stimulation < 0.5 secs
  - Visible stimulation 0.5 – 3 secs

(Ambient lighting dependent)
- ◆ Minimum Stimulation for Visible Emission:
  - Continuous: <1 nW/cm<sup>2</sup> @ 450 nm
  - <25 μW/cm<sup>2</sup> @ 950 nm
  - (measured under darkened conditions)
  - Nd:YAG 2 kW/cm<sup>2</sup> @ 1064 nm
  - (7 ns pulse @ 10 Hz, low ambient light)
- ◆ Maximum Stimulation:
  - Nd:YAG 60 MW/cm<sup>2</sup> @ 1064 nm
  - (7 ns pulse - single pulse)



Applied Scintillation Technologies has the knowledge and expertise based on years of experience to partner you in the development of custom products for laser alignment & IR imaging/detection. Resolution, sensitivity, speed & colour of response are a few of the parameters that can be influenced in the production of a customised product that more closely relates to your customer need.

- ◆ A customised product is often a more cost effective solution
- ◆ Formulations can be developed to meet your specific requirements
- ◆ Exceed your initial expectations through partnership development
- ◆ An ISO9002 company – quality assurance is guaranteed through every delivery
- ◆ Product differentiation can provide unique product positioning versus competitors
- ◆ Enjoy continued product development and technical support through partnership

APPLIED SCINTILLATION TECHNOLOGIES LTD  
 8 ROYDONBURY INDUSTRIAL ESTATE  
 HORSECROFT ROAD  
 HARLOW CM19 5BZ UNITED KINGDOM

TEL +44 [0] 1279 641234 FAX +44 [0] 1279 413679  
 e-mail sales@appscintech.com

