

UVisualize – visualization of rapid UV and blue 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

Ultra violet and blue lasers & laser diodes are in routine use in scientific instrumentation, laboratories and many other applications. It is essential that such systems be aligned and beam shape checked in a safe and convenient manner.

Often UV lasers are pulsed systems with very short pulse widths. Alignment and beam profiling with conventional card methods is difficult due to the short duration of visible pulses while CDD methods are expensive.

The Applied Scintillation Technologies Solution

ASTs, UVisualize product has the broad band response and slow decay times required to provide a flexible solution in the UV and blue regions making it a key tool in laboratory and industrial applications.

Key features are:

- ◆ Gives **yellow** emission under UV stimulation.
- ◆ **Long persistence**
- ◆ Active in popular laser bands including N₂, HeCd, tripled Nd:YAG etc.
- ◆ **Always ready for use** with no optical charging necessary.
- ◆ Detects UV at powers as low as **1 nW/cm²**
- ◆ Free from hazardous reflections.
- ◆ A low cost alternative to beam profilers.

Product Styles

The **UVisualize** 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 cm²
- ◆ **Disc + Wand**
Disc OD 25 mm
optical mount compatible
Active area ~3 cm²
- ◆ **Optical Bench Mounted Head**
Head OD 70 mm
Depth 8 mm
Post dia. 12.6 mm

Active area ~12.6 cm²

Performance Specifications

◆ Typical Applications

Band 1: N₂, HeCd, Ar⁺, tripled Nd:YAG etc.

◆ Emission Colour: (see graph)

Yellow centred 580 nm
Broad band emission 490 nm to 700 nm

◆ Persistence (stimulation removed)

Emission visible 6 secs – 4 mins
(ambient lighting conditions dependent)

Note: Emission can be quenched using NIR

◆ Quenching of Yellow Fluorescence

Minimum Stimulation:

Pulsed: 7ns, Nd:YAG @ 1064 nm
2 MW/cm² (10 pulses, low ambient)

◆ Minimum Stimulation for Visible Emission:

Pulsed: < 8 W/cm² @ 337 nm, 4 ns, 20 Hz
< 40 W/cm² @ 337 nm, 4 ns, 1 Hz
(measured under darkened conditions)

Continuous : < 1 nW/cm² @ 450 nm

< 1 nW/cm² @ 365 nm
(measured under darkened conditions)

◆ Maximum Stimulation

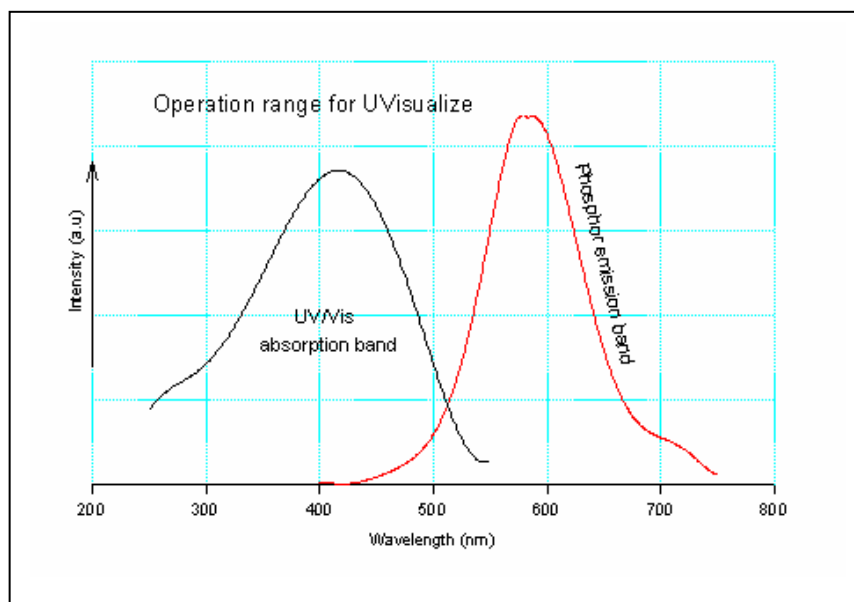
7ns, Nd:YAG @ 1064 nm
60 MW/cm² (single pulse)

Card format only:

7ns, Nitrogen @ 337 nm
130 MW/cm² (single pulse)

Disk + head formats only:

7ns, Nitrogen @ 337 nm



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 & UV 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

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