

VIEWERS of IR & UV RADIATION

V-IR or V-UV is a high-efficiency ceramic disk with high sensitivity to either coherent (laser beam) or non-coherent (LED) radiation.

It provides a simple, inexpensive and convenient method of visualizing beam size, shape and cross-sectional intensity distribution.

It is an absolutely essential beam detection tool during laser alignment, spot size calibration or mode structure analysis in both lab and field environment.

V-Disks provides unlimited, continuous viewing of both pulsed and CW laser and light sources. They require no re-charging, have no fading, saturation or after-glow, don't have to be constantly moved around as conventional IR cards and allow real-time monitoring of beam shape and transverse mode structure.

Their operational principle is based on either up- or down-converted transitions in the unique powder mixture of ions of rare-earth metals. As a result IR radiation can be observed as a green light, and UV radiation appears as red or deep red color.

Vigitek has developed a proprietary technology of making V-Disks as solid structures of various shapes and sizes (either round or rectangular). Standard dimensions are 40 mm Dia. x 5 mm Thk., 25 mm Dia. x 5 mm Thk., 50 x 50 x 5 mm Thk. Custom sizes are available on request and carry minimal quantity requirements. Disks can be used as a free-standing screen or as a hand-held wand for the applications that require access to the beam.

V-Disks are long-lasting and requires no maintenance: if the active surface becomes damaged it can be easily refinished with fine sandpaper.

TYPICAL APPLICATIONS:

IR - Laser Diodes (808, 880, 915, 940, 980, 1450, 1470, 1550 nm); Nd:Glass, Nd:YAG, Nd:YLF, Nd:YVO4, Er:Glass lasers (1047-1064, 1540 nm).

UV - Excimer Lasers, Gas Lasers, frequency-tripled Nd:YAG, doubled Alexandrite, etc.

Various Light-Emitting Diodes



Image of 1W/1470 nm laser diode beam transmitted through cylindrical lens.

TECHNICAL SPECIFICATIONS:

Stimulation Spectral Range: 800-1700 nm (IR); 190-390 nm (UV).

Emission Color: Green - 520...550 nm (IR); Red - 645...675 nm (UV).

Duration of After-Glow (radiation source removed): <10 msec for both IR and UV viewers.

Spatial resolution: > 20 grooves/mm, features of < 50 μm in size can be resolved.

Sensitivity Threshold: 10 μJ/cm² (pulsed) and 100 μW/cm² (CW) for both IR and UV viewers.

Surface Damage Threshold:

- From ~1 J/cm² for nsec pulses to 10 J/cm² for μsec and msec pulses;
- 100 W/cm² for intermittent CW operation;
- Using V-Disks with high fluence laser beams requires their expansion or attenuation.
- Do not place V-Disks at or near focal plane of the laser beam.

Always wear protective safety goggles when operating live laser equipment!

