



## Beam Profiler Slit & ND Material Damage Thresholds

The graph shows estimates of damage thresholds based upon extrapolation from actual damage measurements with a 25  $\mu\text{m}$  diameter beam. All DataRay slit scanners use tri-metal film on sapphire substrate slits as standard, 2.5 to 100  $\mu\text{m}$  slits are available as standard. Sapphire slit damage thresholds are the **red line** in the graph.

The silica slits, the **orange line**, are precision  $\pm 0.2 \mu\text{m}$  slits. These slits are available for special applications, but have a damage threshold which is a factor of 6 lower. These slits also transmit  $\sim 1\%$  over their whole area.

The ND film material, the **mauve line**, may be used in the cone of the beam, *away from the focus*, to further attenuate the beam. The damage threshold is a factor of 60 lower.

**Warning. This ND film damage threshold information is for guidance only.** Any use of ND material is at customer risk. Notwithstanding the guidance given in the graph below, ND material subject to deliberate or accidental over-exposure may lead to combustion of the material and consequential smoke and fire risks.

### Sapphire slit, Silica slit & ND2, ND3 film damage thresholds.

#### Maximum safe power versus beam diameter @ 830 nm.

**Below 600 nm, derate in proportion to  $\lambda$ . e.g. at 400 nm, derate by (400/830).**

