



## Discovery Laser Flash (DLF-2) Thermal Diffusivity System: Salient Features

The following features are **unique** to the DLF-2 system and contribute to a superior overall performance when compared to competitive commercial units.

*Items marked with (\*) are not offered by other manufacturers.*

### Modular Design

- The system is made up of an array of modules, allowing the selection of the most economical combination for any application. (\*)
- Total versatility by using different furnaces in a fully modular fashion. This is a unique capability that other manufacturers attempt to imitate, but in reality have not achieved. They require partial disassembly and re-assembly of their system, while we simply switch the pulse delivery wand and detector (apx. 5 minutes total time) from one unit to the other. (\*)
- The modular design allows the addition of other furnaces as scope of work or requirements change.
- The entire system is most modern, up-to-date, based on the latest technology, and produces data that is unsurpassed by any other. Our accuracy and reproducibility in both thermal diffusivity and specific heat capacity is of the quality associated with national standards institutes.

### Multi sample holder

- Allows testing 6 samples side-by-side. (\*)
- Increase throughput by **factor of six**.

### Round or square samples are interchangeable and intermixable. (\*)

- For highest quality specific heat capacity measurements (5) unknown samples and (1) reference tested side-by-side. (\*)
- Ability to accept a variety of accessory capsules, such as melt capsules, powder capsules, and special holders for specific applications

**Fiberoptic pulse delivery wand** of proprietary design (\*) ensures a 99% homogenized laser pulse which then produces very high repeatability (roughly twice as good as any direct firing laser pulse.) This also provides for rapid (15 minutes or less) switching between different furnaces or modules.

### Wide range IR detector without iris.

- A greatly simplified detector arrangement with IR optics that eliminates the often troublesome electromechanical iris used in competitive units. (\*)

**Laser pulse mapping** of each shot to allow accurate determination of pulse width and applying corrections accordingly. (\*)

**Down-firing laser:** Laser and power supply are completely independent, stand-alone structures to aid

in maintenance and repair.

- Large capacity, 35 joules Neodymium: glass laser, tuned to full power at 250ms. Class I, fully shielded, completely safety interlocked for laser radiation and high voltage shock prevention
- Built-in alignment laser (red)

**Missing sample detector** to prevent damage to detector in case of missing or damaged sample. (\*)

**Extensive real-time and post-test data analysis software**

- Over 15 different loss calculations built in, plus a proprietary “goodness of fit” regression analysis, which automatically picks the best correction for the case.
- Built-in thermal conductivity computation

**Quick change pneumatically locked bottom window** for rapid inspection and/or cleaning. (Replacement time 20 seconds.) (\*)

**Pyrometer** (when applicable) seamlessly covering entire temperature range from ambient to 2500°C.

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