

# DAGGER-10

**ELIXIR**  
Photonics Incorporated

## High Power Industrial Nanosecond UV Laser



**DAGGER-10** is the best of all low cost-of-ownership industrial UV laser with thermally compensated super stable cavity design technology. It offers >10 W output power at 50 kHz with pulse energy over 200  $\mu\text{J}$  and pulse duration <20 ns. The excellent beam parameter performance, plus their proven reliability, makes Dagger-10 suitable for a wide range of high-precision industrial micromachining, including via drilling, electronic package singulation, silicon wafer sawing and scribbling, transparent material cutting etc..

### KEY HIGHLIGHTS

Repetition rate of 40 – 100 kHz

TEM<sub>00</sub> ( $M^2 < 1.3$ )

Pulse width < 20 ns @ 50 kHz

Pulse energy > 200  $\mu\text{J}$  @ 50 kHz

Compact

RS232 and external GATE control

Assembled in 1000 class clean room

### APPLICATIONS

Flex circuit cutting and machining

Microvia drilling of printed circuit boards

Thin film metal (copper, gold etc..) cutting, patterning, marking and machining

LED processing and production

Si wafer scribing, cutting and dicing

Indium-Tin Oxide (ITO) removal and patterning on glass and plastic



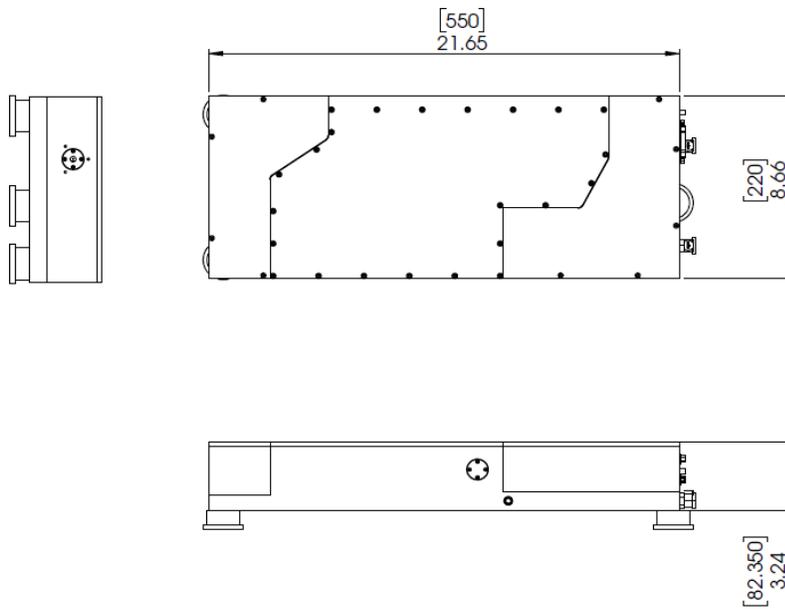
# DAGGER-10

## 10 W 355 nm High Power Industrial Nanosecond UV Laser

### System Specifications

|                                |  |
|--------------------------------|--|
| Center Wavelength              | 355 nm                                   |
| Pulse Repetition Rate          | 40 to 100 kHz                            |
| Pulse Duration                 | <20 ns @ 50 kHz                          |
| Maximum Average Power          | > 10 W @ 50 kHz                          |
| Average Power Stability        | < 2% rms over 8 hours                    |
| Pulse-to-pulse Stability       | < 3% rms                                 |
| Spatial Mode                   | TEM <sub>00</sub> , M <sup>2</sup> < 1.3 |
| Beam Divergence                | < 1.5 mrad (full angle)                  |
| 1/e <sup>2</sup> Beam Diameter | ~1.0 mm                                  |
| Beam Roundness                 | > 90%                                    |
| Pointing Instability           | < 50 μrad                                |
| Polarization Direction         | Horizontal                               |
| Polarization Ratio             | > 100:1                                  |
| Cooling                        | Water-cooling                            |
| Ambient Temperature            | 15 to 30°C                               |
| Storage Temperature            | -10 to 50°C                              |
| Relative Humidity              | 10% to 80% (non-condensing)              |
| Warm-up Time                   | < 10 minutes                             |
| Operating Voltage              | 85 to 264 V (50/60 Hertz)                |

### Mechanical Specifications



Elixir Photonics follows a policy of continuous product improvement. Specifications are subject to change without notice. Elixir Photonics offers a limited warranty for all DAGGER lasers. For full details of this warranty coverage, please contact Sales Department at [sales@elixirphotonics.com](mailto:sales@elixirphotonics.com).

