



## “Eye-safe” 1,54 $\mu\text{m}$ ns laser

### KAUKAS 1



#### FEATURES:

Compact robust design  
OEM version available  
Integration into portable devices

#### APPLICATIONS:

LIDAR and Laser Ranging  
LIBS  
Metrology and instrumentation  
Automotive



**Laser specifications:**

|  |                   |
|--|-------------------|
| Wavelength                               | 1534 nm           |
| Wavelength tolerance                     | ± 1 nm            |
| Operating mode                           | Pulsed            |
| Average output energy (10min), @5 Hz     | >1 mJ             |
| Energy stability (10min), @5 Hz          | <1 %              |
| Pulse duration                           | 10 ns             |
| Pulse repetition rate (best performance) | 1 – 5 Hz          |
| Polarization contrast                    | >1:80             |
| Beam diameter at exit window             | <1 mm             |
| Beam divergence                          | <5 mRad           |
| Beam profile                             | TEM <sub>00</sub> |

**Physical dimensions:**

|                         |                           |
|-------------------------|---------------------------|
| Laser module dimensions | 85 x 26 x 20 (L x W x H)  |
| Laser driver dimensions | 128 x 83 x 48 (L x W x H) |
| Power supply dimensions | 205 x 92 x 50 (L x W x H) |

**Utility requirements:**

|                       |                     |
|-----------------------|---------------------|
| Pump current          | < 15 A              |
| Pump duration         | < 10 ms             |
| Operating temperature | 15-35°C             |
| Cooling               | Passive air cooling |

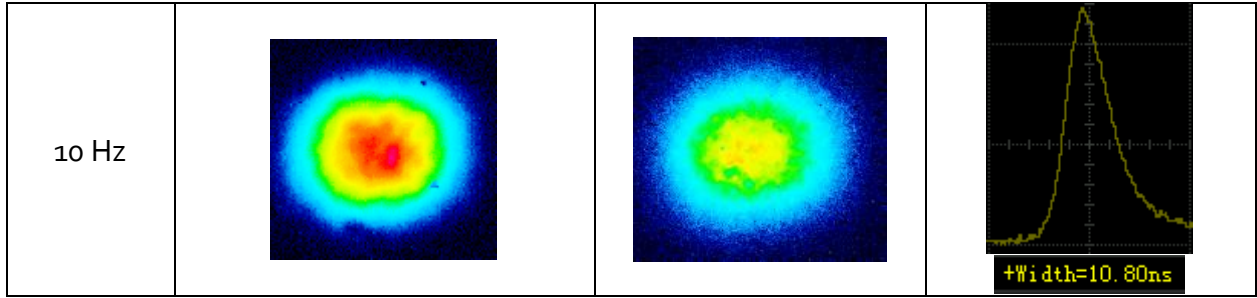




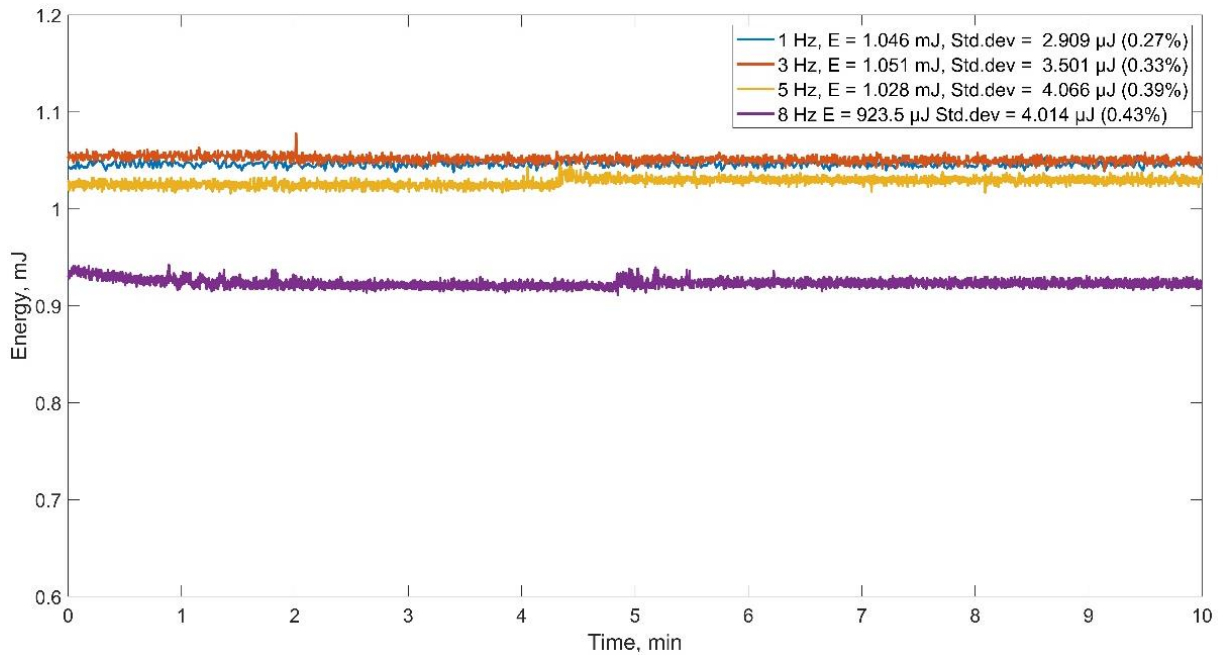
Laser beam profile:

| Repetition rate | Near field (30 cm from the laser) beam profile | Far field (75 cm from the laser) beam profile | Pulse duration     |
|-----------------|--|---|--------------------|
| 1 Hz            |  |   | <br>+Width=10.40ns |
| 3 Hz            |  |   | <br>+Width=10.40ns |
| 5 Hz            |  |   | <br>+Width=10.80ns |
| 8 Hz            |  |   | <br>+Width=10.80ns |
| 9Hz             |  |   | <br>+Width=10.80ns |





Output energy stability:



KAUKAS 1 laser average output energy stability for different repetition rate  
\*with 9 and 10 Hz repetition rates laser operating time becomes shorter <30 sec\*





Laser repetition rates control with pump duration and pump current:

| Repetition rates | Pump duration | Pump current |
|------------------|---------------|--------------|
| 1 Hz             | ≥7 ms         | 14,9 A*      |
| 3 Hz             | ≥7,5 ms       |              |
| 5 Hz             | ≥7,5 ms       |              |
| 8 Hz             | ≥8,5 ms       |              |
| 9 Hz             | ≥9 ms         |              |
| 10 Hz            | 9.5 ms*       |              |

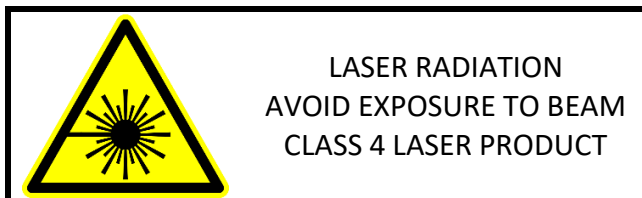
\* NOTE: Do not exceed 10 ms pump duration and 15 A pump current, otherwise you would damage active medium in laser.



Necessary components to run the laser:

|   |  |
|---|--|
|  |  |
| <p>KAUKAS 1 laser model</p>   | <p>Laser driver</p>  |
|  |  |
| <p>Power supply</p>   | <p>USB-RS232 adapter</p>   |

Laser safety class:





Laser head schemes:

