

“Eye-safe” 1,54 μm 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 ₀₀ |

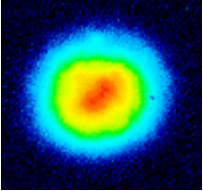
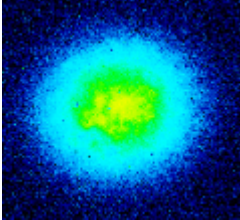
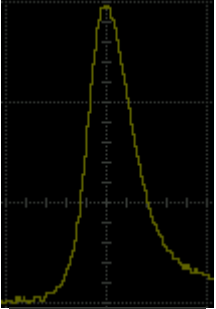
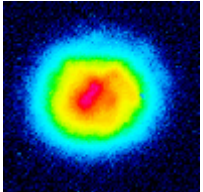
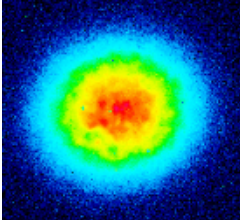
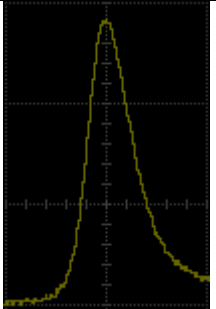
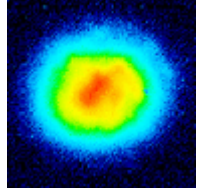
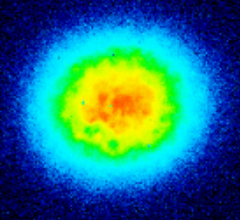
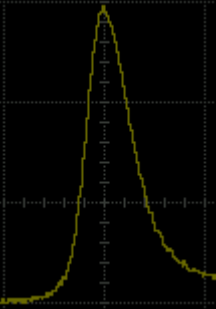
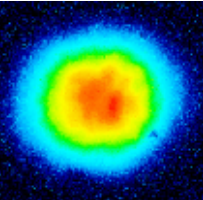
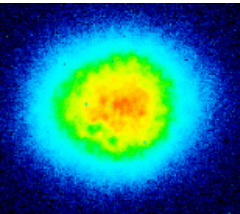
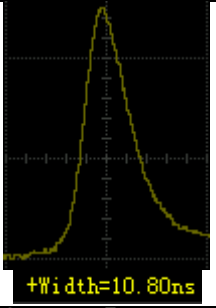
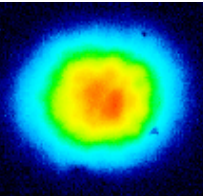
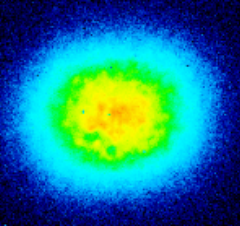
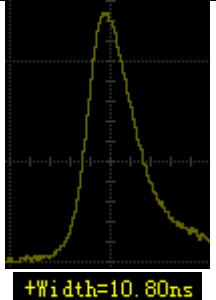
Physical dimensions:

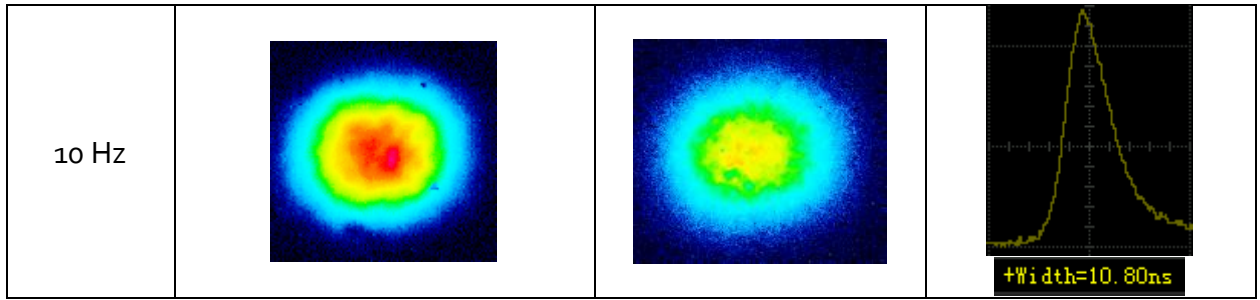
| | |
|-------------------------|---------------------------|
| Laser module dimensions | 85 x 26 x 20 (L x W x H) |
| Laser driver dimensions | 128 x 83 x 48 (L x W x H) |
| Power supply dimensions | 205 x 92 x 50 (L x W x H) |

Utility requirements:

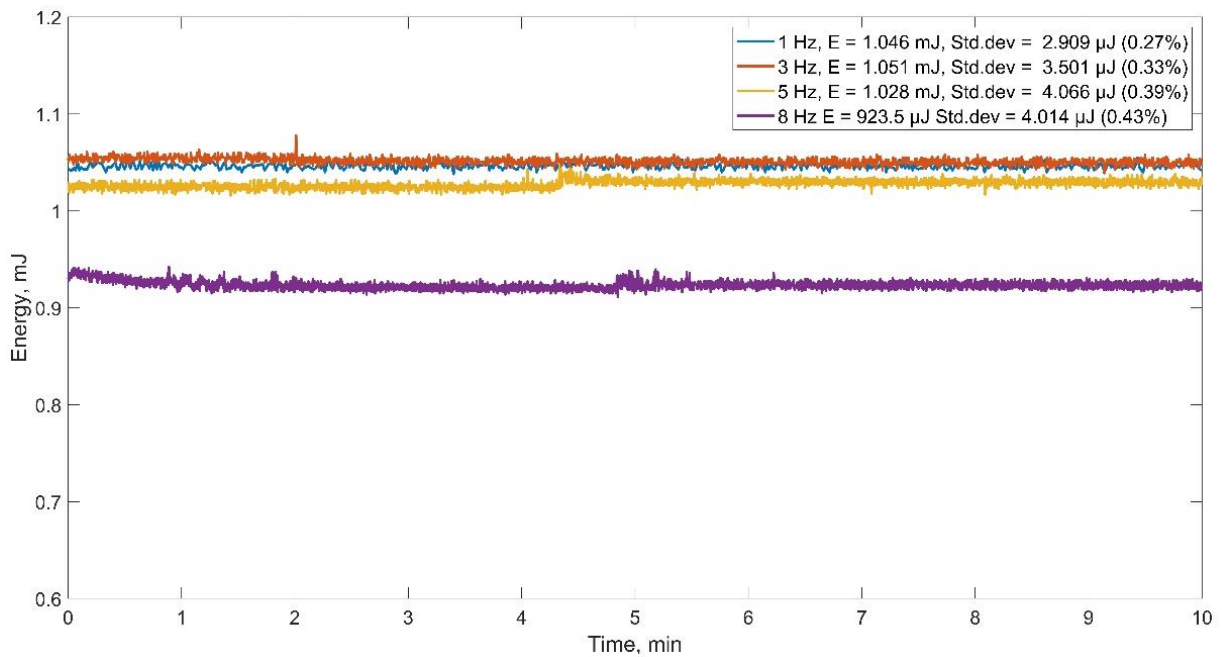
| | |
|-----------------------|---------------------|
| Pump current | < 15 A |
| Pump duration | < 10 ms |
| Operating temperature | 15-35°C |
| Cooling | Passive air cooling |

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 |  |  |  +Width=10.40ns |
| 3 Hz |  |  |  +Width=10.40ns |
| 5 Hz |  |  |  +Width=10.80ns |
| 8 Hz |  |  |  +Width=10.80ns |
| 9 Hz |  |  |  +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:

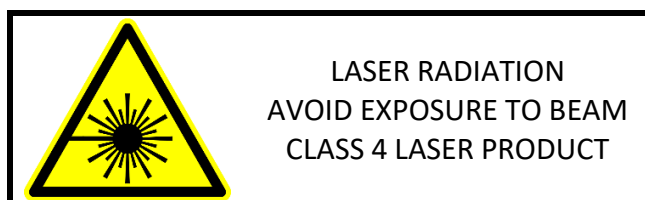
| Repetition rates | Pump duration | Pump current |
|------------------|---------------|--------------|
| 1 Hz | ≥7 ms | 14,9 A* |
| 3 Hz | ≥7,5 ms | |
| 5 Hz | ≥7,5 ms | |
| 8 Hz | ≥8,5 ms | |
| 9 Hz | ≥9 ms | |
| 10 Hz | 9.5 ms* | |

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

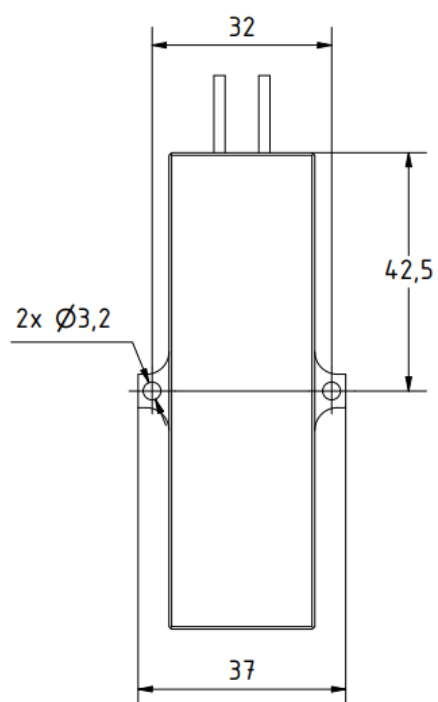
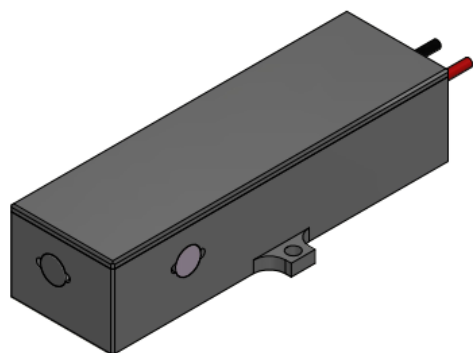
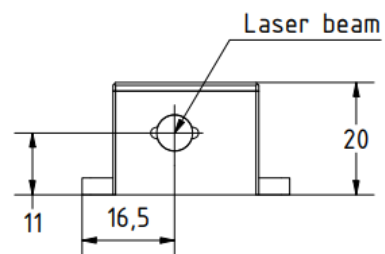
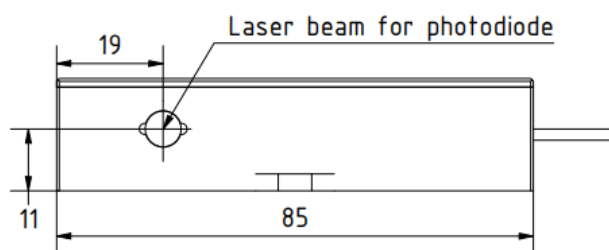
Necessary components to run the laser:

| | |
|---|--|
|  |  |
| KAUKAS 1 laser model | Laser driver |
|  |  |
| Power supply | USB-RS232 adapter |

Laser safety class:



Laser head schemes:



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