DSEA
CW Fiber Amplifier with a Frequency Doubler

Input wavelength/Output wavelengths:
1550–1560 / 775–780 nm

Custom Wavelengths:
Any within the range 770 – 785 nm

Output Power:
Up to 2 W

DSEA is a product line of Erbium fiber amplifiers equipped with a frequency doubler unit. These amplifiers deliver maximum output power up to 2 W (free space output) or up to 1.5 W in a fiber-coupled version.
These models are intended for use along with the different seed lasers including single-frequency seeders with an output power range of 0.1 – 1 mW (-10 – 0 dBm) or 1 mW – 50 mW (0 – 17 dBm).

Key Features

- High Beam Quality
- High Power Stability
- Low Noise figure
- Ultra-narrow linewidth amplification
- Polarization-maintaining
- Built-in preamplifier
- Computer Control

Applications

- Atomic Trapping and Cooling
- Quantum Optics
- High-Resolution Spectroscopy
- Metrology
- Frequency Standard

FEATURES

SHG Phase Matching Temperature Tuning

DSEA allow for the Second Harmonic Generation Crystal/Waveguide Mixer for SHG Phase Matching Temperature tuning according to the seed-laser set wavelength.

Output Power Adjustment. APC/ACC modes of operation. Output Power Stability.

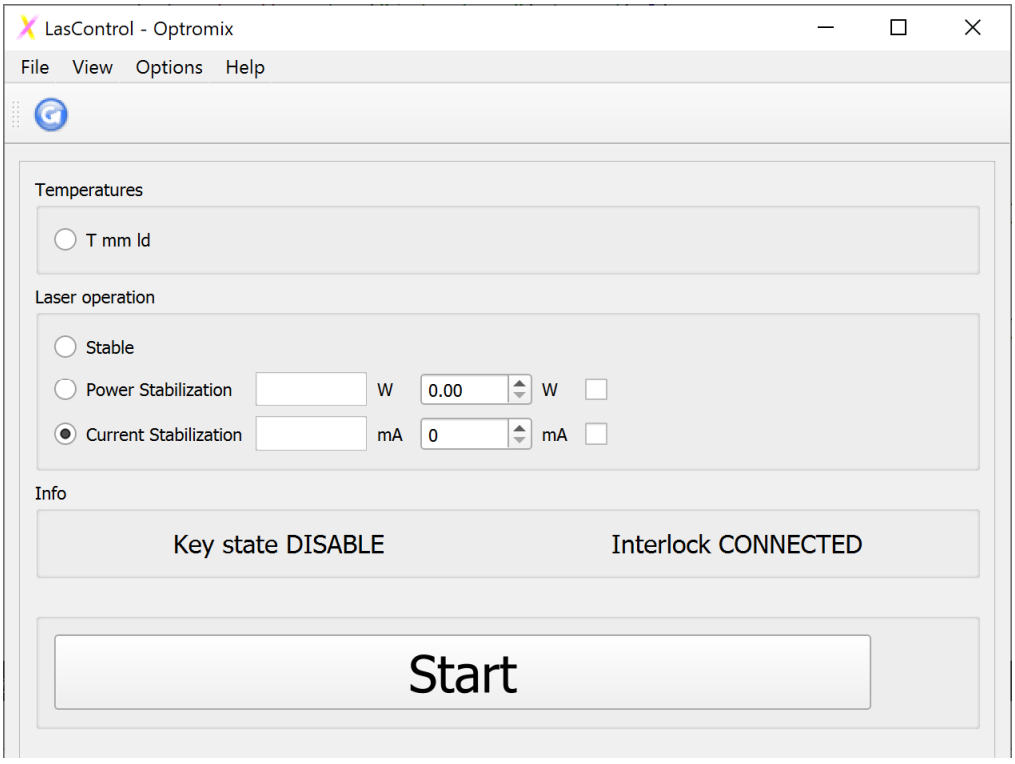
This laser model allows for output power adjusting in the range of 10 – 100 % of the nominal output power. The amplifier can operate in Automatic Power Control (APC) as well as in Automatic Current Control (ACC) modes. These amplifiers provide excellent long term power stability.

Optical Output Type

DSEA provides a free space output from the laser head. It also can be equipped with a fiber port or a Waveguide Mixer for SHG with a fiber output for fiber coupling.

Computer Control

The standard DSEA model allows controlling the laser using a computer via a USB port. The original Optromix software is provided along with the laser.



SPECIFICATION

OPTICAL

Parameter	DSEA
Operating Mode	CW, Single-frequency, TEM_{00}
Wavelength Range	1550/775, 1556/778, 1560/780 nm
Custom Wavelength	770 –785 nm
Single-frequency option	Available
Required Input Power	0.1 – 1 mW (-10 – 0 dBm) or 1 mW – 50 mW (0 – 17 dBm)
Nominal Output Power (Free Space)	50, 100, 200, 500, 1000, 1500, 2000 mW
Nominal Output Power (Fiber Coupled)	50, 100, 200, 500, 1000, 1500 mW
Output Power Tunability	10 – 100%
Power Stability[2]	< 1% (typical <0.5%)
Beam quality (M^2)	< 1.05
Polarization	Linear (PER > 20dB)
Optical Output	Free Space or FC/APC
Output Optical Isolaton	Built-in Input Isolator / Built-in Output Isolator

Notes

1. The input and correspondingly output wavelengths can be tunable.
   For example 1560.18 –1560.78 / 780.09 – 780.39 nm.
2. Over 8 Hour with base temperature constant within 0.2 0C after 30-minute warm-up

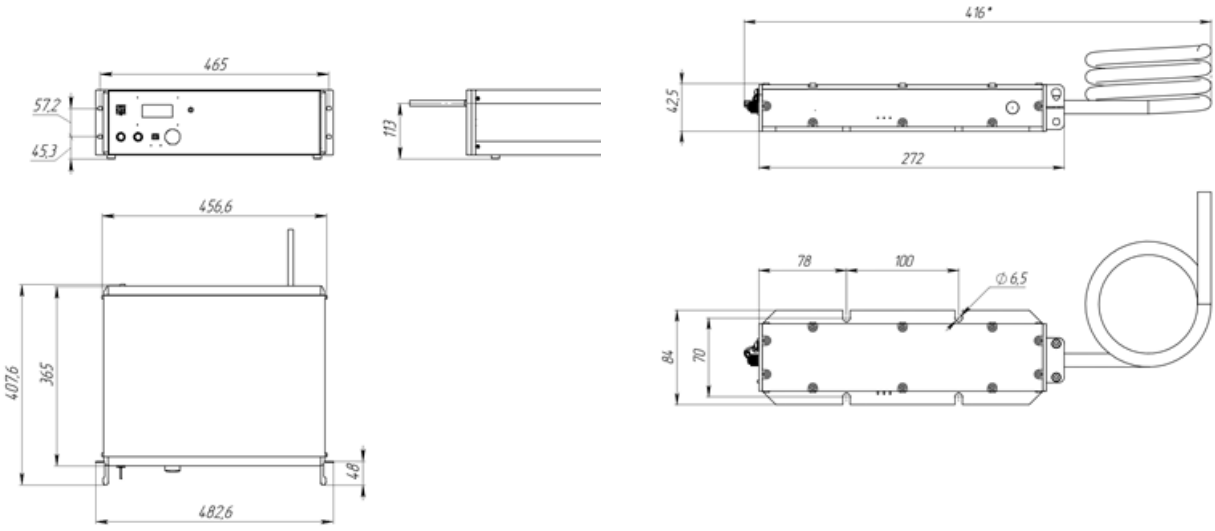
ELECTRICAL/MECHANICAL/ENVIRONMENTAL

Parameter	DSEA
Power Supply Requirements	100–240V, 50–60Hz, Single Phase
Power Consumption (10W output)	< 500 W
Cooling	Forced Air
Control Connector[1]	USB
Dimensions (WxHxL)	Electro-optical Unit: 465 x 140 x 365 mm Laser Head: 84 x 42.5 x 272 mm
Standard Output Cable Length[2]	1.2 m
Weight	< 18 kg
Operation temperature	15 – 35 ^{0}C
Storage temperature	- 40 – +70 ^{0}C
Operation Humidity	10 – 85 %
MTBF	> 10.000 Hrs

Notes

1. Optional Connectors: RS232, Ethernet
2. Optional length: Up to 3 m

DIMENSIONS



Product code: DSEA-7xx-yyyy-cc	xx - Wavelength(nm) yyyy - Output Power(mW) cc - Optical output: FS - Free Space, FP - Fiber Port + Patch cord with FC/APC, FA - Waveguide mixer for SHG with FC/APC output

Standard Warranty – 12 months from the date of delivery.

Information in this document is a subject to change without notice.

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