ML6606

553 nm laser source for Ba photoionization

This adaptation of Modulight's ML6600 platform is intended to be used for Barium trapped ion quantum computing applications. Whether used independently with a PC GUI or seamlessly integrated into OEM systems, its output options as a free-space beam or coupled into a SM/PM fiber provide versatile solutions for your applications.

Applications

The laser system centered at 553 nm is based on frequency-doubled VECSEL and is purposed for two-step photoionization of neutral Barium. The laser properties include single-frequency narrow linewidth operation, low intensity noise, and high beam quality.

Electro-optical Characteristics[1]

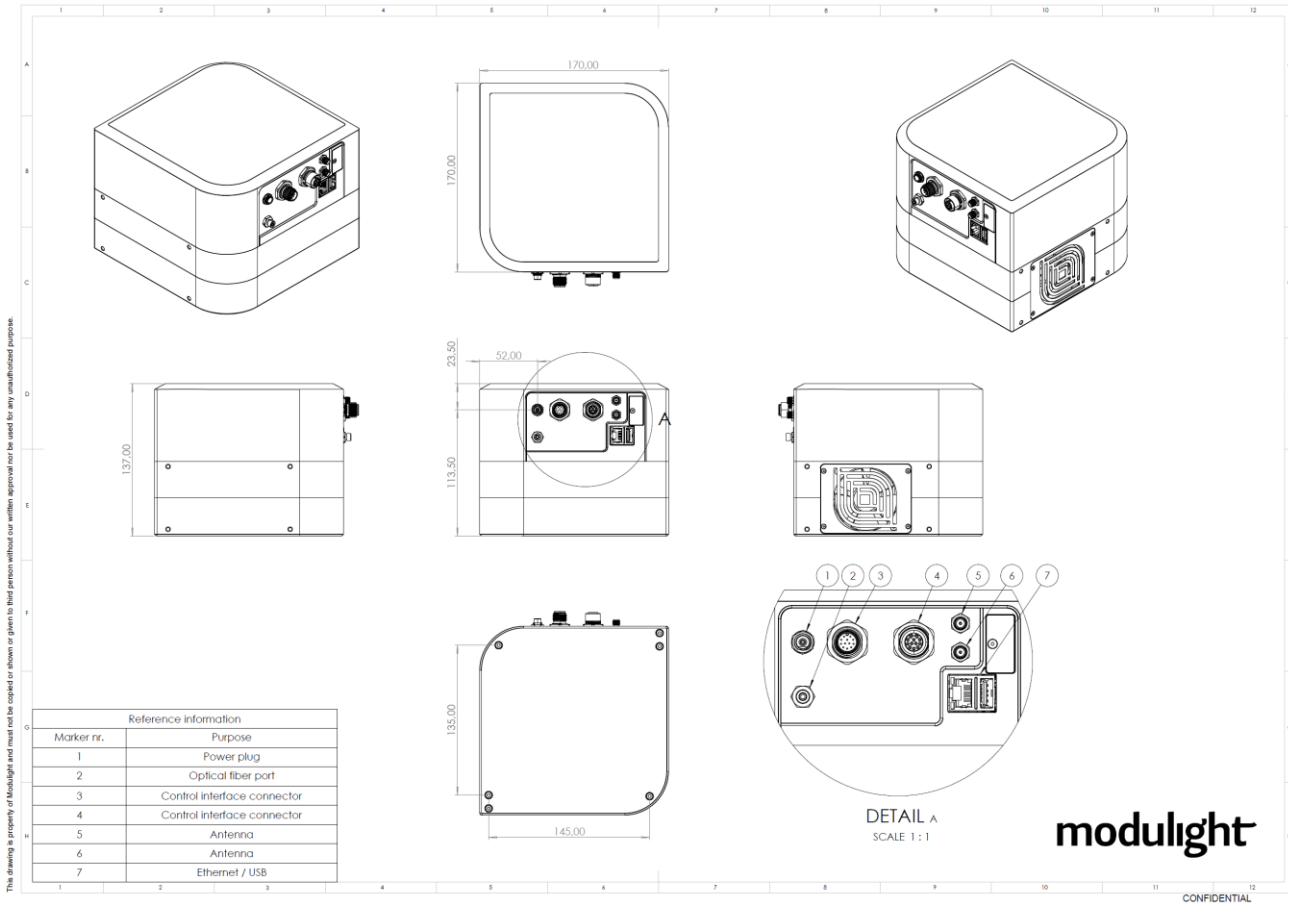
Parameter	Typical Value	Unit
Central Wavelength	553	nm
Central Frequency	541.433	THz
Optical Output Power; free-space	500	mW
Optical Output Power; fiber-coupled	300	mW
Mode of Operation	CW	
Free-running Linewidth	<1	MHz
Stabilized Linewidth	1...100	kHz
Mode-hop Free Tuning Range	10	GHz
Power Stability, peak-to-peak	<1	%
Spatial Mode	TEM_{00}	
Beam Quality	<1.2	M^2

[1]Tailored configurations available

General characteristics

Parameter	Specification	Unit
Dimensions, Laser Core	170 x 170 x 137	mm
Cooling	Air	
Supply Voltage	24	VDC
Communication Interface	RS232, RS422	
Baseplate Temperature, max.	< 40	°C
Ambient Operating Temperature	18-35	°C
Warm-up Time	<10	min

Mechanical Specification

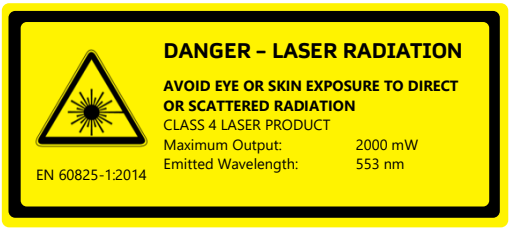


Reference information	
Marker nr.	Purpose
1	Power plug
2	Optical fiber port
3	Control interface connector
4	Control interface connector
5	Antenna
6	Antenna
7	Ethernet / USB

All dimensions are millimeters (mm).

Safety Information

- The laser light emitted from this laser diode is visible and potentially harmful to the human eye. Avoid eye and skin exposure to the beam, both direct and reflected.
- Products are subject to the risks normally associated with sensitive electronic devices including static discharge, transients, and overload. Please ensure ESD protection prior to handling the products.
- These Modulight products are not intended for use in systems where product malfunction can reasonably be expected to result in personal injury.



Peak power and wavelength are for safety analysis only, not to present device performance.

Liability note

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RoHS compliance

The product complies with EU RoHS 2 (Directive 2011/65/EU) and China RoHS II (Management Methods for the Restriction of the Use of Hazardous Substances in Electrical and Electronic Products)