

高能风冷Q开关激光器

HIGH ENERGY AIR-COOLED Q-SWITCHED LASER

Q2HE

产品特点

Up to 100mJ 脉冲能量输出, up to 4W 平均输出功率

1053 or 1064nm 波长输出

风冷型 (water-free)

Up to 100 Hz 重复频率

1053nm波长输出型号的重复频率平稳可调

> 2 G shot 超长半导体泵浦寿命

内建同步脉冲发生器与外部设备协同工作

通过内置以太网控制界面实现远程监测与控制

可选配附加 2nd 谐波发生器

可选配独立的 2nd, 3rd, 4th or 5th 谐波发生器

可选配作用于基本波长的能量衰减器附件

可选配脉冲能量监测器

应用领域

激光诱导击穿等离子发射光谱 (LIBS)

OPO, 染料激光器, Ti:sapphire 泵浦

遥感技术 (Remote sensing)

激光烧蚀 (Laser ablation)

飞行时间质谱 (TOFS)

激光诱导荧光 (LIF) 光谱

闪光光解 (Flash photolysis)

基质辅助激光解吸电离 (MALDI)

脉冲激光沉积 (PLD)

可选附件

> 可选配附加型二次谐波发生器 (型号为SHG) 输出二次谐波

> 可选配高达五次谐波输出能力的独立型H-SMART系列谐波发生器

> 可选配作用于基本波长的电动衰减器

> 可选配带有模拟和/或数字输出的脉冲能量监测器



创新的无水激光晶体冷却技术可输出脉冲能量高达100mJ和/或平均输出功率高达4W的高质量激光光束。

Q2系列半导体泵浦全风冷Q开关激光器可广泛适用于需要高峰值功率脉冲的应用场合。

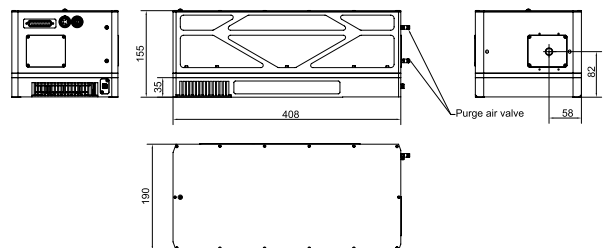
Q2HE系列为Q开关激光器市场树立了新的标准。得益于先进的激光器设计,紧凑、人性化的整合性系统使得激光器几乎无需维护。没有额外的水冷装置和笨重的电源系统占用额外的空间。激光器元件高度集成化在Q2HE腔体内,外部模块仅有一个紧凑型控制盒和27 V DC,50-150W的电源适配器(据型号不同有所差异)。

低于7ns的脉宽和低光束发散使得基本波长可有效转换为最短波长低至211nm的高次谐波。

作用于用户设备的低抖动触发脉冲可提内触发模式。如果需要,激光脉冲可由延迟发生器外部触发。

激光器通过内置服务器经以太网端口进行监控。电脑手机与浏览器均可用于控制Q2(无需安装任何软件)。并提供用于与用户设备集成的API。

DRAWINGS

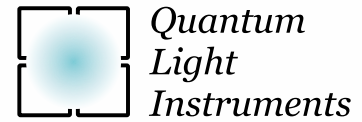


Laser head dimensions (in mm)



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规格参数¹⁾

型号	Q2HE						
	-D20	-D50	-D100	-E20	-E50	-F10	-F20
波长, nm	1053 or 1064			1053		1053 or 1064	
脉冲重复频率 ²⁾ , Hz	20	50	100	20	50	10	20
最高脉冲能量, mJ	40			70		100	
典型值脉冲宽度(FWHM) ³⁾ , ns	< 7					< 6	
峰峰值脉冲能量稳定性 ⁴⁾	< 0.5 % RMS						
功率输出漂移 ⁵⁾	± 3.0 %						
光束模式	Bell-shaped, >75 % fit to Gaussian						
光束发散 ⁶⁾	< 1 mrad						
Polarization	Linear, horizontal						
典型光束直径 ⁷⁾ , mm	3.0			4.0		5.0	
Jitter ⁸⁾	< 0.5 ns RMS						
可选配谐波发生器 - 最高脉冲能量 ⁹⁾ , mJ							
526.5 / 532 nm	20			35		50	
351 / 355 nm	12			20		30	
263 / 266 nm	5			10		15	
211 / 213 nm	1.5			3		6	
可选配衰减器 ¹⁰⁾							
输出能量范围	1 – 95 %						
外形尺寸(W×L×H), mm ³	Laser head: 190 × 408 × 55, Controller unit: 108 × 191 × 59 AD/DC Power adapter: 192 × 178 × 46 typical						
运行要求							
冷却需求	风冷						
环境温度, °C	15 – 30					15 – 27	
相对湿度	10 – 80 % (non-condensing)						
电源	90 – 230 VAC, single phase, 47 – 63 Hz ¹¹⁾						
平均功耗, W	50	100	150	80	150	70	120

1) Due to continuous improvements all specifications are subject to change. Unless stated otherwise all specifications are measured at fundamental wavelength and maximum pulse repetition rate. The parameters marked typical are not specifications. They are indications of typical performance and will vary with each unit we manufacture.

2) Factory-set pulse repetition rate is fixed at max repetition rate shown in the table. Pulse repetition rate up to 200 Hz are available by request.

3) At FWHM level at 1064 nm, measured with 350 ps rise time photodiode.

4) Measured during 30 seconds operation after warm-up.

5) Over 8 hour period after 20 minutes of warm-up when ambient temperature variation is less than ± 2 °C.

6) Full angle measured at the 1/e² level.

7) Beam diameter is measured 20 cm from laser output at the 4σ level.

8) In respect to falling edge of pump diode triggering pulse.

9) Q2HE is compatible with our attachable second harmonic generator and all models of stand-alone H-SMART harmonics generator. Pulse energies presented here are maximum values. Please refer to harmonic generator datasheets for detailed specifications.

10) Motorized attenuator intended to be attached to the laser housing. Transmission can be changed remotely through laser web-server control interface.

11) Laser can be powered from appropriate 12 or 27 VDC power source. Please inquire for details.