

风冷短脉冲Q开关激光器

AIR-COOLED SHORT PULSE Q-SWITCHED LASER

NEW! 在亚纳秒脉冲的持续时间约为 750ps 时脉冲能量 > 5 mJ

Q-SPARK

产品特点

在波长为 1064nm 时脉冲能量输出高达 20mJ
峰值功率高达 20MW

风冷型 (water-free)

脉冲持续时间低至 750 ps

高达 100 Hz 脉冲重复频率

可选内置的 2nd, 3rd, or 4th 谐波发生器

> 2 G shot 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 监测与控制

可选配的由PC控制的电动衰减器附件

可选配脉冲能量监测器

可选配光纤耦合输出



DPSS

附件装置

- > 可安装由PC控制的电动衰减器
- > 可安装有模拟和/或数字接口的脉冲能量监视器
- > 可选配作用于基本波长的电动衰减器
- > 提供独立接口来输出倍频后的剩余谐波

应用领域

- 激光诱导击穿等离子发射光谱 (LIBS)
- 激光雷达 (LIDAR)
- 激光烧蚀/微加工 (Laser ablation/micromachining)
- 飞行时间质谱 (TOFS)
- 时间分辨光谱 (TRS)
- 拉曼光谱
- 皮肤医学 (纹身去除等)
- 眼科学
- 时域热反射测量系统 (TDTR)

Q-SPARK的半导体泵浦、风冷、Q开关激光器设计使其可广泛适用于亚纳秒或纳秒峰值脉冲功率需求高达 20MW 的应用场合。

我们优化了我们的创新型免水冷激光晶体末端泵浦技术 (water-free laser crystal end-pumping technology) 并采用了紧凑节能的封装技术, 使其可产生近高斯、低发散的亚纳秒脉冲。可配置被动Q开关Q-SPARK版本, 以产生持续时间短至750脉冲能量秒超过5 mJ的脉冲。

E-O Q开关版本在 10-100Hz的范围内可提供脉冲持续时间 <1.5ns 能量高达 20mJ的脉冲。

激光器由内建网络服务器通过以太网端口监测控制, 提供 API以用于用户设备集成。

丰富可选的附件装置可让激光器功能得到进一步的扩展:

- > 内置谐波发生器可产生高达四次谐波的输出波长。请参阅数据表了解脉冲能量的规格。
- > 使用我们可选配的作用于基波或谐波的电动衰减器可实现脉冲能量的调节
- > 通过选配我们具备模拟和/或数字输出接口的脉冲能量监视器即可监测脉冲能量
- > 剩余谐波发生器波长可以通过可选的辅助出口连接。
- > 可按需求提供光纤耦合输出, 请查阅详细规格

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AIR-COOLED SHORT PULSE Q-SWITCHED LASER

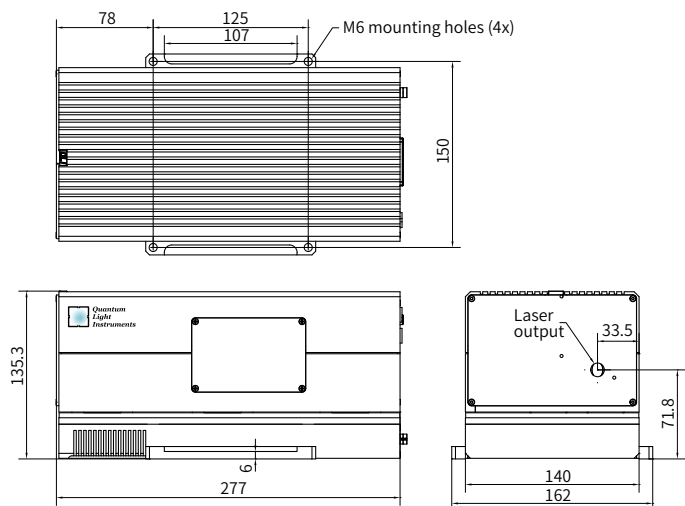
规格参数¹⁾

型号	Q-SPARK						
	-100PS	-20PS	-A10PS	-A100	-A50	-B20	-C10
波长, nm	1064						
Q开关类型	passive, Cr:YAG			active, Pockels cell			
脉冲重复频率 ²⁾ , Hz	100	20	10	100	50	20	10
最高脉冲能量, mJ	1	2	5	2	5	10	20
典型脉冲宽度(FWHM) ³⁾	< 2 ns		< 800ps (600ps optional)	< 2 ns		< 1.5 ns	
峰峰值脉冲能量稳定性 ⁴⁾	< 1.5 % RMS			< 1.2 % RMS			
线宽	SLM ⁵⁾			< 0.8 cm ⁻¹			
功率输出漂移 ⁶⁾	± 3.0 %						
光束模式	nearly TEM ₀₀ , > 85 % fit to Gaussian						
光束发散 ⁷⁾	< 1.5 mrad				< 1 mrad		
Polarization	Linear, horizontal						
典型光束直径 ⁸⁾ , mm	1.2			2.0			
Jitter ⁹⁾	1 μs RMS			< 0.5 ns RMS			
可选配内建谐波发生器 ¹⁰⁾ - 最高脉冲能量, mJ							
532 nm	0.5	1	2.5	1	2.5	5	10
355 nm	0.25	0.5	1.6	0.5	1.6	2.5	5
266 nm	0.1	0.2	0.8	0.2	0.8	1.5	2.5
可选配衰减器 ¹¹⁾							
输出能量范围	0.5 - 95 %						
外形尺寸(W×L×H), mm ³⁾	Laser head: 140 × 277 × 135, Controller unit: 108 × 191 × 59 Power adapter ¹²⁾ : 50 × 125 × 32 typical (for +12 VDC output)						
运行要求							
冷却需求	风冷						
工作环境	T: 15~30°C; H: 10%~80% (non-condensing)						
电源	90 - 230 VAC, single phase, 47 - 63 Hz ¹³⁾						
平均功耗, W	40	30	50	40	30	30	30

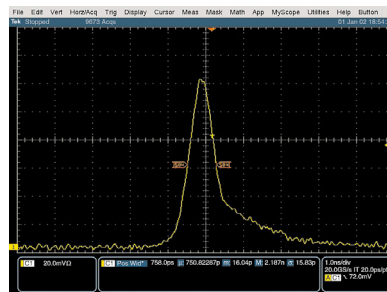
- 1) Due to continuous improvements all specifications are subject to change. Unless stated otherwise all specifications are measured at fundamental wavelength and maximum pulse repetition rate. The parameters marked typical are not specifications. They are indications of typical performance and will vary with each unit we manufacture.
- 2) Factory-set pulse repetition rate is fixed at max repetition rate shown in the table.
- 3) At FWHM level at fundamental wavelength, measured with 350 ps rise time photodiode.
- 4) Measured during 30 seconds operation after warm-up.
- 5) SLM pulses are produced for >95% of operating time.
- 6) Over 8 hour period after 20 minutes of warm-up when ambient temperature variation is less than ± 2 °C.
- 7) Full angle measured at the 4σ level.
- 8) Beam diameter is measured 20 cm from laser output at the 4σ level.
- 9) In respect to falling edge of pump diode triggering pulse.
- 10) Q-SPARK can be configured with build-in harmonics generator and beam separators for selecting single wavelength at the exit port. Two port configuration is available by request.
- 11) Motorized attenuator intended to be attached to the laser housing. Transmission can be changed remotely through laser web-server control interface.
- 12) Power adapter dimensions might differ from indicated here, depending on model.
- 13) Laser can be powered from appropriate 12 VDC power source. Please inquire for details.

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DRAWINGS



Typical temporal waveform of Q-SPARK-A10PS laser



Typical temporal waveform of Q-SPARK-B10 laser

