

SYNC option

Synchronization of the modelocked pulse train to an external reference signal to within a jitter of < 0.5 ps (rms).



Synchronization Technique

Synchronization is achieved by putting one cavity mirror on a voltage controlled piezo. The voltage applied to the piezo changes the cavity length and thus the modelocked pulse repetition rate. In a feed back loop, the pulse repetition rate is controlled and adjusted until it is locked to an externally provided reference signal. In addition to this fast and fine cavity length control, a slow movement mechanism provides coarse cavity length control.

Operation

High Q Laser's SYNC option is contained in a separate controller box which is connected to the laser system components that need to be controlled for synchronization, such as the voltage controlled piezo.

Works with all High Q Laser systems

The SYNC option can be combined with all High Q Laser systems as long as the pulse repetition rate is within the specified range. For pulse repetition rates outside the specified range, please inquire for customized SYNC options. The SYNC option is best ordered in combination with the laser system which ensures optimum performance and factory testing. However, it is also possible to add this option to High Q Laser systems later on, or even to other laser systems (please inquire).

Technical Data

Pulse jitter	< 0.5 ps (rms)*
Pulse repetition rate	50 MHz - 400 MHz
Reference signal amplitude	> 3 dBm; low phase noise**
Reference signal frequency	< 10 kHz from specified pulse repetition rate
Power Supply	100 VAC - 240 VAC / 50 or 60 Hz
Controller size	300 mm x 200 mm x 88 mm (l x w x h)
Phase jitter monitoring	~ 10 mV / ps

* vibration free platform and noise free environment assumed

** a low-noise reference signal may be obtained from a microwave signal generator such as the HP 8663A.

We think ultrafast!™

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