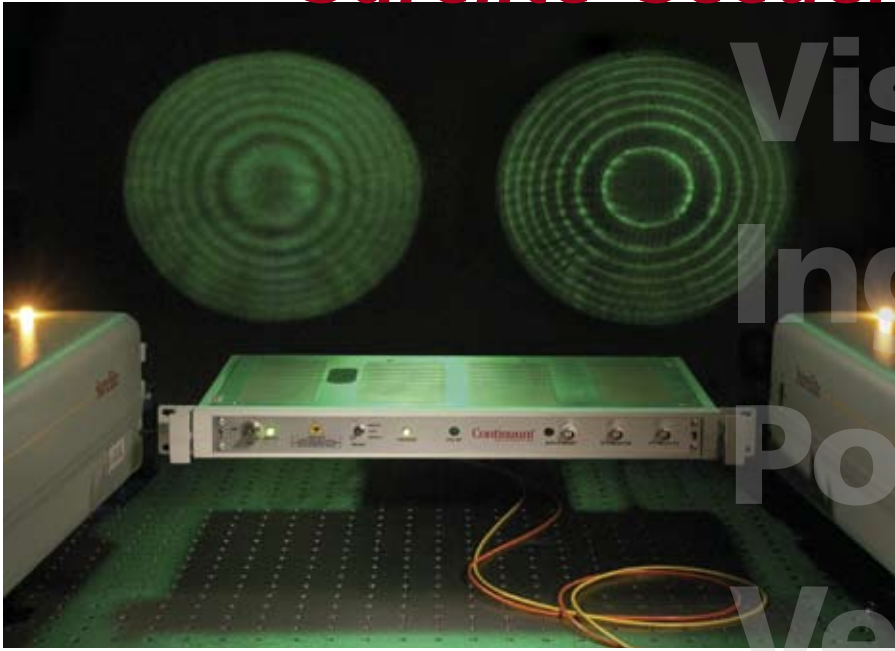


Surelite™ Seeder



Vision
Ingenuity
Power
Versatility

Innovative Technology and Surelite™ Reliability

Continuum extends the capability and performance of the Surelite laser family with the SI-200 seeder system. Injection seeding produces ultra-narrow single longitudinal mode (SLM) outputs with a smooth temporal profile. The technique delivers near transform limited linewidths and smooth temporal profiles for hours of flawless operation. Seeding is accomplished by injecting a seed beam from a single mode cw diode pumped fiber laser into the Surelite oscillator. Continuum pioneered the commercial introduction of this technique and holds the patent on its use with radially variable reflectivity resonator optics*.

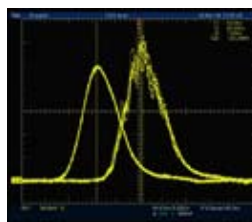
Fiber Delivery - Continuum customers are familiar with this technique since injection seeding has been an option of the Powerlite Series using a seeder laser which bolts directly on the Powerlite bench. However, due to the size constraints on the Surelite bench, it became necessary to develop a fiber delivered seed system. The resulting system is self contained in a rack mounted power supply with one polarization preserving single mode fiber optic delivery cable which brings the light to the Surelite oscillator, and one multi-mode fiber optic cable to bring back the optical feedback pulse from the leakage pulse through the rear mirror. The electrical

photograph – Output of Surelite systems through etalons, both unseeded (left) and seeded (right). Notice how the narrow linewidth in seeded mode produces sharp etalon fringes compared to the broad linewidth of the unseeded mode which produces diffuse fringes. Also shown is the rack-mounted seeder power supply and fiber delivery system.

cable completes the connections by supplying the piezo ceramic transducer voltage to hold the Surelite oscillator cavity fixed in frequency.

Applications - Injection seeding produces output that has both narrow SLM linewidth and smooth temporal profile. Important applications that require narrow linewidth include pumping narrow linewidth tunable systems, holography, and Doppler LIDAR.

*U.S. Patent #4,918,704



Temporal profiles for the Surelite in both seeded (left) and unseeded (right) modes of operation. Notice how the multimode profile at the unseeded pulses turns to a smooth profile in seeded mode.

For more information, please contact your local Continuum representative, www.continuumlasers.com, or call 1(866)532-1064.

Continuum
The High Energy Laser Company™