

ti Series/Flyer 3D Sub Systems

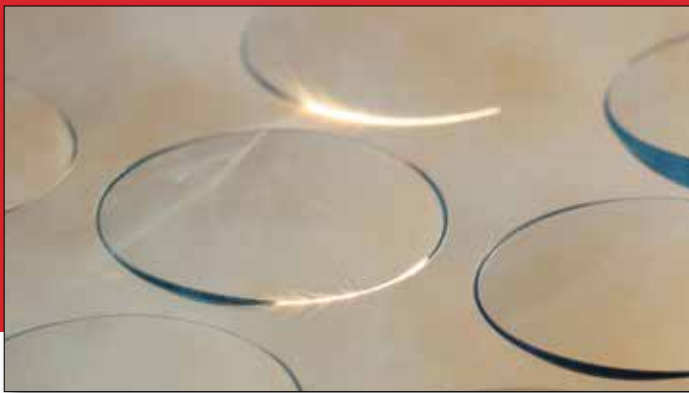
Factory Pre-Aligned Scan Heads & Lasers



Synrad Flyer 3D ti-Series Laser Scanning Solutions are fully contained subsystems that eliminate the hassle and worry of sourcing individual components and performing laser beam alignment. These sub systems include:

- A high performance ti-Series CO₂ laser, your choice of model
- Flyer 3D scan head configured for your application
- WinMark® Pro software for process control
- Matched 48 VDC power supply
- Mechanical mounts designed to ensure out-of-box optical alignment
- 2-year warranty

Many options are available to meet your application processing needs, including: three tiers of laser output power, three laser wavelengths with coordinating scan head optics, thirteen scan head field sizes, fan or water cooling, and more. Training and extended warranty packages are also available to ensure seamless implementation and optimal productivity.



Throughput Speed

The throughput rate of any laser processing system is dependent on a balance of laser power, application process, and the absorption characteristics of the material being processed. For example, polypropylene labels with a target area of 15.74" x 13.77" can be kiss-cut at a speed of 240 ips. However, ablating a thick layer of uncoated paperboard to reveal a colored layer beneath at the same 15.74" x 13.77" size can be done at a speed of 60 ips, due to the material type and the amount of material being removed. The bottom line is each application is unique, and testing will best determine throughput speed.

Specifications

Specification	ti60 (60 W)	ti80 (80 W)	ti100 (100 W)
Output Power	60 W	80 W	100 W
Wavelength	9.3 μm/10.2 μm/10.6 μm		
Mode Quality	M ² ≤ 1.3		
Beam Diameter	2.2 mm ± 0.3 mm		
Cooling	Fan/Water		
Heat Load (max)	900 W	1200 W	1700 W
Input Voltage	48 VDC	48 VDC	48 VDC
Current	18A	22A	35A
Power Requirement	1Ø: 13A @ 220V		
Dimensions (w/ Rail Kit)	49.2 x 9.5 x 9.1		
LxWxH Inches (mm)	(1249.7 x 241.3 x 231.1)		
Weight (w/ Rail Kit)	Fan - 65.6 (29.7)	Fan - 68.8 (31.2)	
lbs. (kg)	Water - 62.9 (28.5)	Water - 62.9 (28.5)	

For more information and specifications visit:

<https://www.synrad.com/products/lasers/ti-series>

Flyer 3D/ti-Series Water Cooled laser scanning system utilizes cooled water to maintain optimum operating temperature of the laser. A Chiller (not included) is required for the system. Recommended water temperature is 18 - 22 °C with a flow rate of 1 - 2 GPM, <60 PSI.

Flyer 3D/ti-Series Fan Cooled laser scanning system utilizes fans to maintain optimum operating temperature of the laser. Fans are installed, and included with the 60, 80, and 100 W kits.

Laser Application Testing

Synrad Application Labs offer testing services and industry best practice procedures tailored to your specific application. Application Engineers will determine the optimal CO₂ laser equipment needed to maximize throughput and quality to meet your application needs. Learn more at:

<https://www.synrad.com/services/ApplicationsTesting>

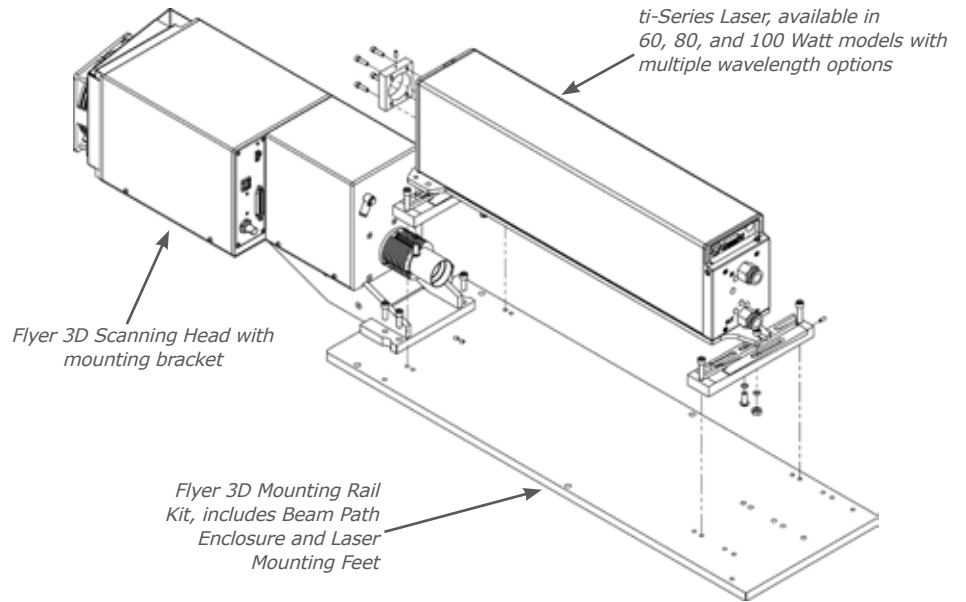
SYNRAD


A Novanta Company

ti Series/Flyer 3D Sub Systems

Each Flyer 3D & ti-Series Laser Scanning Solution includes:

- High performance ti-Series CO₂ laser; available in 60, 80, or 100 Watt models, and 10.6 μm, 10.2 μm, and 9.3 μm wavelength options
- Fan or water cooled options
- Flyer 3D three-axis scan head
- Mounting feet (pre-aligned for installation)
- Mounting rail (base plate) with mounting screws
- Beam path enclosure with mounting screws
- WinMark Pro software
- 2-year standard depot warranty
- Communication cables
- 48 VDC power supply





This Class 4 laser product emits **invisible infrared laser radiation** in the 9.3 - 10.6 μm CO₂ wavelength band. Because **direct of diffuse laser radiation can inflict severe corneal injuries**, always wear eye protection when in the same area as an exposed laser beam. **Do not allow the laser beam to contact a person.** This product emits an invisible laser beam that is capable of burning human tissue. Always be aware of the beam's path and always use a beam block when testing.

Flyer 3D Field Size Options

Field Size (Width x Height)		Working Distance		Spot Size (μm)
Inches	mm	Inches	mm	M ² = 1.2 μm
10.6 x 8.9	269 x 227	10.55	268	181
11.0 x 9.4	280 x 238	11.10	282	190
11.9 x 10.1	302 x 258	12.20	310	206
13.7 x 12.0	347 x 304	14.72	374	245
15.7 x 13.8	400 x 350	17.09	434	282
17.9 x 15.7	454 x 400	19.92	506	325
20.0 x 17.8	508 x 451	22.67	576	368
22.1 x 19.7	561 x 501	25.35	644	410
23.9 x 21.4	607 x 544	27.68	703	446
26.5 x 23.9	673 x 607	31.10	790	499
31.2 x 28.3	792 x 718	37.09	942	592
36.0 x 32.8	914 x 833	43.35	1101	688
42.7 x 39.1	1084 x 993	51.97	1320	822

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