

# Flyer 3D Marking Head System



**3-axis marking system**

**Mark larger fields - up to 42" x 39"**

**Works with Synrad lasers - up to 400W\***

**Synrad performance & reliability**

\* See list of compatible lasers below

## Take your laser marking operations to new dimensions with the Flyer 3D dynamic 3-axis marking system - think BIG

Break free from the confines of traditional small-field, two-dimensional marking with Synrad's **Flyer 3D** CO<sub>2</sub> laser marking system. Featuring a third servo-driven z-axis to dynamically focus the laser beam and continuously maintain a small spot size while marking, **Flyer 3D** empowers production lines with the ability to sharply and quickly mark larger fields (up to 1084mm x 993mm) and longer objects, such as banners, with never-before experienced accuracy, speed and detail.

The **Flyer 3D** is designed to work with select Synrad industrial CO<sub>2</sub> lasers up to 400 watts, and is backwards compatible with all Synrad **FH Flyer** marking heads, making system upgrades smooth and uncomplicated. Initial setup and beam positioning is easier than ever with the built-in visible diode pointer that is standard to the **Flyer 3D**. Fully assembled straight out of the box, **Flyer 3D** is simple to mount, quick to set up and easy to implement; communicating with your production systems via Ethernet TCP/IP communications protocol, MODBUS/IP, or hard-wired I/O.

Coupled with Synrad's Firestar line of continuous wave lasers and Synrad's all new Pulstar pulse CO<sub>2</sub> lasers, the **Flyer 3D** system offers a variety of configurations to choose from, providing you with the flexibility you need to pick the best laser, at the right wattage, for your marking, cutting or drilling needs. Get a **Flyer 3D** and think BIG.

### Flyer 3D Operating Specifications:

- |   |   |  |
|---|---|--|
| <p><b>Object Marking:</b></p> <ul style="list-style-type: none"> <li>• Index/tracker mode</li> <li>• 1D/2D codes (including UID) Vector objects</li> <li>• TrueType®/Open Type® Fonts/Stroke Text/PostScript® Fonts</li> <li>• Monochrome/Grayscale Bitmaps</li> <li>• Banner tracking</li> </ul> | <p><b>Communication / Control Systems:</b></p> <ul style="list-style-type: none"> <li>• Ethernet TCP/IP</li> <li>• MODBUS/IP</li> <li>• WinMark Pro</li> <li>• Stand-alone mode</li> <li>• .NET Form Control</li> <li>• Active X Control</li> </ul> | <p><b>I/O Capability:</b></p> <ul style="list-style-type: none"> <li>• 8 opto-isolated inputs</li> <li>• 8 opto-isolated outputs</li> <li>• Built-in I/O power supply</li> </ul> |
|---|---|--|

### Specifications:

Flyer 3D Marking Head	
Field Size Range	269mm x 227mm to 1084mm x 993mm
Spot Size Range** M2 = 1.0	165µm - 750µm
Spot Size Range** M2 = 1.2	181mm - 822mm
Repeatability	0.002% of the smaller of field height and field width dimensions
Working Distance Range	268mm - 1320mm
Marking Speed	7620 mm/s
Input Voltage / Input Current	48V ±0.5V / 6.7A, 20A Peak
Heat Load	320W nominal, 400W max
Input Beam Power (continuous)	500W
Input Beam Wavelength***	10.2µm - 10.8µm
Operating Temperature Range	0°C - 40°C
Humidity Range	0-95%, non condensing
Dimensions (L x W x H)	558 x 191 x 219 (mm) / 21.9 x 7.5 x 8.6 (in)
Dimensions (L x W x H) p100 only	580 x 191 x 280 (mm) / 22.8 x 7.5 x 11.1 (in)
Weight	21.45 lbs / 9.7 kg

\* Beam specifications measured at 1/e<sup>2</sup>.

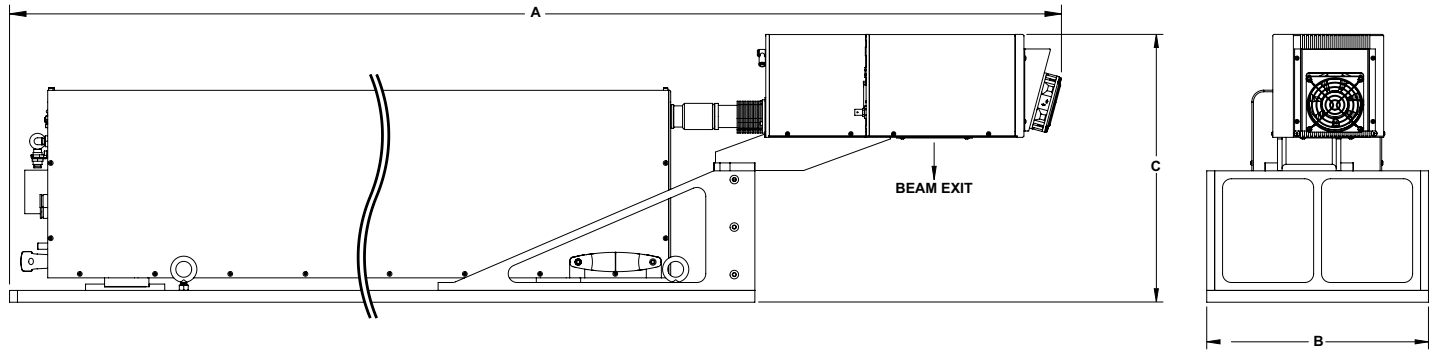
\*\* 1/e<sup>2</sup>, center of field

\*\*\* 9.3 µm available, contact your Synrad Representative  
Specifications subject to change without notice.

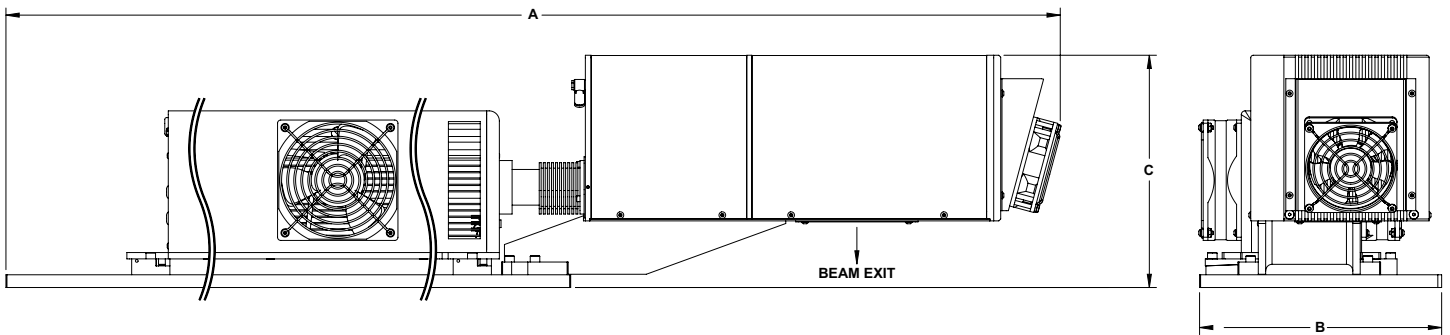
Flyer 3D System Pairings	Cooling System		
Laser	Watts	Fan	H <sub>2</sub> O
Series 48-1	10W	✓	✓
Firestar v30	30W	✓	
Firestar v40	40W	✓	
Firestar t100	100W	✓	
Firestar ti60	60W	✓	✓
Firestar ti80	80W	✓	✓
Firestar ti100	100W		✓
Pulstar p100	100W		✓
Pulstar p150	150W		✓
Pulstar p250	250W		✓
Pulstar p400	400W		✓
Firestar f201	200W		✓
Firestar i401	400W		✓

# Flyer 3D Marking Head System

## Outline and Mounting—Flyer 3D with i401\*:



## Outline and Mounting—Flyer 3D with Fan-Cooled ti Series\*:



Dim	Dimensions for Flyer 3D System Pairings									
	48-1	v30	v40	t100	ti-Series	p100	p150	p250	f201	i401 / p400
<b>A</b>	40.12 [1019.08]	40.24 [1022.21]	49.24 [1250.81]	49.21 [1250.01]	49.21 [1250.01]	50.11 [1272.75]	58.33** [1481.58]	75.33 [1913.28]	75.33 [1913.28]	75.36 [1914.08]
<b>B</b>	7.96 [202.18]	8.00 [203.20]	9.50 [241.30]	9.50 [241.30]	9.50 [241.30]	9.50 [241.30]	9.50 [241.30]	14.00 [355.60]	14.00 [355.60]	14.00 [355.60]
<b>C</b>	9.12 [231.52]	9.12 [231.52]	9.12 [231.52]	9.12 [231.52]	9.12 [231.52]	11.55 [293.24]	11.55 [293.24]	10.37 [263.40]	10.37 [263.40]	16.91 [429.54]

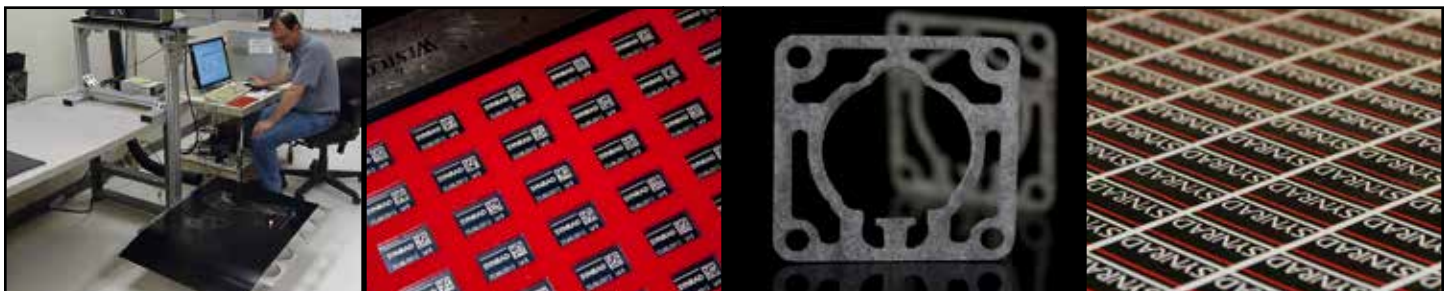
\* See [www.synrad.com](http://www.synrad.com) for outline and mounting drawings for other Laser/Flyer 3D system pairings.

\*\* Contact factory for final length specifications.

## Typical Applications:

**Marking Applications:** With the use of lower wattage lasers, like the Firestar v30, the **Flyer 3D** Marking Head expands your marking capabilities to greater sizes with greater accuracy, speed and detail; but don't just think big, think multi-marking on a larger scale.

**Cutting Applications:** With the use of larger wattage lasers, like the Pulstar p250 or Firestar i401, the **Flyer 3D** Marking Head lets you cut materials for the packaging/converting industries, like kiss-cutting labels or packaging materials; cut and shave fabrics and textiles for the garment industry; and even plastic films for the electronics/cellular industries and various manufacturing processes. Think BIG.



Oversize marking with greater accuracy

Multiple-up marking on larger scale

Delicate cutting with greater detail

Precise kiss-cutting in larger sizes

These are only examples of potential uses for the Flyer 3D Marking Head. Contact your Synrad Representative to determine the best laser for your applications.



Invisible Laser Radiation.  
Avoid eye or skin exposure to direct or scattered radiation.  
Class 4 Laser Product.

