

# LP™-9008 Family



## Ground-Breaking Top-Quality, Ultra High-Speed Automated Laser Plotter

Now you can sustain your throughput at twice the resolution with the new LP-9008, the latest top-quality laser plotting solution from Orbotech. Double your resolution at the same speed or maintain your resolution and boost your speed. Either way, LP-9008 is your key to the highest in high-quality throughput.



# Looking for ultra-high resolution AND ultra-high speed?

The LP-9008 family is your choice for the highest performance laser plotting up to five times faster!



## LP-9008 brings you:

### Ultra-fast throughput

- 120-beam laser technology
- Software raster image processor (RIP)
- Efficient handling of complex design data

### Sophisticated plotting for leading-edge designs

- Multiple resolutions up to 1 $\mu$ m
- Fine lines down to 10 $\mu$ m
- Superior geometric and feature accuracy

### Unattended operation

- Full, advanced automation
- Continuous plotting of up to 300 films
- Three film sizes available simultaneously

### Seamless integration with CAM and plotters

- Integrated advanced plot queue management with Image Manager™
- Full integration with Frontline's CAM stations
- Full integration with LP-7008 and LP-5008 plotters

### The Best Gets Better

The LP-9008 gives you excellent image quality, accuracy and automation with your choice of high-resolution and high-speed – all at **up to 5 times** faster than the current solution! The LP-9008 utilizes the platform of the world's #1 LP-7008 laser plotter- giving you the newest in plotting technology with all the advantages of a field-proven system.

### Ultra-Fast Throughput

With its high-performance 120-beam laser and high-speed electronics, the LP-9008 can plot even the highest density, fine-feature jobs efficiently and accurately. Its software raster image processor (RIP), running on a powerful workstation, ensures maximum vector-to-raster conversion speed and adaptability and unparalleled plotting speeds of up to 380mm per minute at 5µm resolution and up to 18" per minute at 4000 dpi plot resolution. Furthermore LP-9008 allows you to plot using the highest resolutions at ultra-high speed up to 60mm per minute at 1µm resolution and 4.5" per minute at 16,000 dpi resolution.

### Unattended Operation

The LP-9008 offers you a high degree of automation. The system has three easy-to-handle drawers capable of storing as many as 300 films of three different sizes. This "load-and-forget" design reduces labor costs and minimizes the risk of handling and dust-related defects. Upon completion of the plotting sequence, the films are automatically unloaded, either to the developer or to an easily accessible light-tight unload box.

### Sophisticated Plotting for Leading-Edge Designs

With resolutions as fine as 1µm (25,400 dpi), the LP-9008 plots sharp, smooth lines down to 10µm, meeting your tightest tolerances with unmatched line width accuracy. The LP-9008 excellent geometric accuracy enables consistent layer-to-layer registration.

The LP-9008 RIP processes contour data, reducing the amount of data sent from the CAM workstation. Step & Repeat optimization enables fast and easy plotting of heavy, complex jobs with multiple repetition (typical of BGA / CSP jobs).

### Advanced Plot Queue Management with Image Manager™

LP-9008 Image Manager Lite plot queue management application provides direct connection to Frontline's CAM stations for management and control of all CAM jobs sent for plotting. Image Manager Lite facilitates queue monitoring and manipulation of plot queue entries.

Designed for a multiple LP-9008, LP-7008 and LP-5008 plotter environment, the Image Manager plot queue management software package enables direct connections between Frontline CAM stations and each plotter. Image Manager optimizes the use of multiple plotters installed on the same network by using a unique load balancing function.

### A Model to Meet Your Needs

The LP-9008 Family includes the following models:  
**LP-9008m HS** – LP-9008 High Speed offers you a combination of excellent plotting quality and high throughput. Equipped with a metric optical head, it offers 5080, 10160 & 25400 dpi plot resolutions. It is an ideal solution for IC substrates, advanced HDI and Flex PCB production.

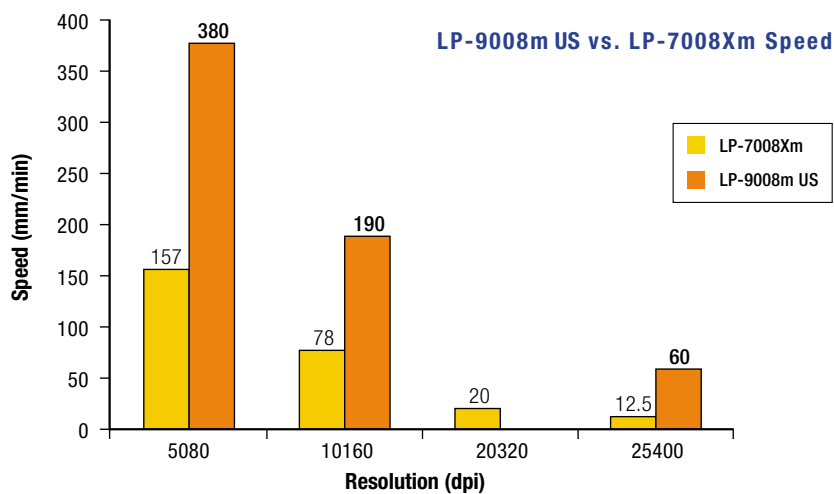
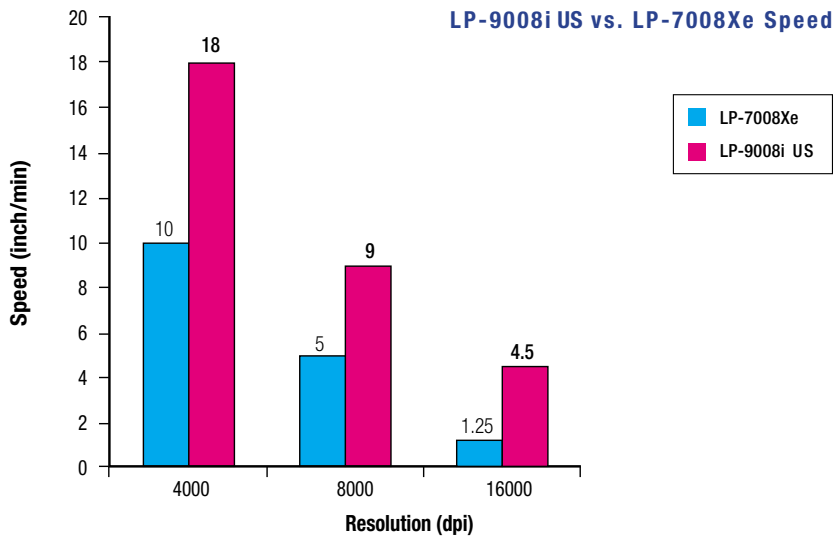
**LP-9008m US** – LP-9008 Ultra-High Speed offers you the highest throughput with the same benefits of LP-9008m HS, making it the best solution for high-volume production.

**LP-9008m UR** – LP-9008 Ultra High Resolution combines ultra fine-line plotting capabilities and high speed. With plotting capabilities down to 10 µm line width and highest line width accuracy, it is ideal for flip-chip and other ultra fine-line designs.

**LP-9008i HS** – LP-9008 High Speed is equipped with an imperial optical head, offering 4000, 8000 & 16000 dpi plot resolutions. Compatible with CAM data processed in inch units, this model is an ideal solution for MLB and HDI board production.

**LP-9008i US** – LP-9008 Ultra High Speed offers you the highest throughput with the same benefits of LP-9008i HS, making it the best solution for high-volume production.

**LP-9008i RS** – this model offers you the same qualities as LP-9008i HS, but with lower throughput. Should capacity demands increase, you can upgrade LP-9008i RS to LP-9008i HS and US models.



# LP™-9008 Family

## Specifications

Model	LP-9008m HS	LP-9008m US	LP-9008m UR	LP-9008i RS	LP-9008i HS	LP-9008i US
<b>Description</b>	<b>High Speed – metric Model</b>	<b>Ultra High Speed – metric model</b>	<b>Ultra High Resolution – metric model</b>	<b>Standard Speed – inch model</b>	<b>High Speed – inch model</b>	<b>Ultra High Speed – inch model</b>
<b>Plotting resolution</b>	5 2.5 1µm	5 2.5 1µm	2.5 1 1µm	1/4 1/8 1/16 mil	1/4 1/8 1/16 mil	1/4 1/8 1/16 mil
<b>Maximum plotting speed</b>	250 125 50 (mm/min)	380 190 60 (mm/min)	190 60 30 (mm/min)	9 4.5 2.25 (inch/min)	12 6 3 (inch/min)	18 9 4.5 (inch/min)
<b>Geometrical Accuracy Radial @ 3s, full format, FTF</b>	17.5 µm	17.5 µm	17.5 µm	0.7 mil	0.7 mil	0.7 mil
<b>Repeatability</b>	±5 µm	±5 µm	±5 µm	±0.2 mil	±0.2 mil	±0.2 mil
<b>Min. line width</b>	40 20 15µm	40 20 15µm	20 15 10µm	2 1 0.75 mil	2 1 0.75 mil	2 1 0.75 mil
<b>Line Width Accuracy</b>	±4 ±2 ±1.5µm	±4 ±2 ±1.5µm	±2 ±1.5 ±1µm	±0.2 ±0.1 ±0.08 mil	±0.2 ±0.1 ±0.08 mil	±0.2 ±0.1 ±0.08 mil
<b>Max. # of drawers</b>	3	3	3	3	3	3
<b>Unload modes</b>	<ul style="list-style-type: none"> <li>• Via feeder to all types of film processors</li> <li>• Unload to a light-tight box</li> </ul>	<ul style="list-style-type: none"> <li>• Via feeder to all types of film processors</li> <li>• Unload to a light-tight box</li> </ul>	<ul style="list-style-type: none"> <li>• Via feeder to all types of film processors</li> <li>• Unload to a light-tight box</li> </ul>	<ul style="list-style-type: none"> <li>• Via feeder to all types of film processors</li> </ul>	<ul style="list-style-type: none"> <li>• Via feeder to all types of film processors</li> <li>• Unload to a light-tight box</li> </ul>	<ul style="list-style-type: none"> <li>• Via feeder to all types of film processors</li> <li>• Unload to a light-tight box</li> </ul>
<b>Platform</b>	Sun Blade 150	Sun Blade 1500	Sun Blade 1500	Sun Blade 150	Sun Blade 150	Sun Blade 150
<b>Film sizes held by drawers</b>	14"x11" to 26"x32"					
<b>Max. No. sheets, 7 mil film</b>	300 (100 per drawer)					
<b>Film Types</b>	Red laser film (Kodak, Agfa, DuPont, Fuji)					
<b>Input Formats</b>	ODB++, Gerber, Emma80, Mutoh/Pentax, IPC-350, RS274X, NEC, Excellon IMG, DPF, DXF, HPGL, OPF, OPFX					
<b>Communication</b>	Ethernet-based					
<b>Optional Features</b>	<ul style="list-style-type: none"> <li>• 1 µm resolution</li> <li>• Additional 2 film drawers (up to 3 total)</li> </ul>	<ul style="list-style-type: none"> <li>• 1 µm resolution</li> <li>• Additional 2 film drawers (up to 3 total)</li> </ul>	<ul style="list-style-type: none"> <li>• Additional 2 film drawers (up to 3 total)</li> </ul>	<ul style="list-style-type: none"> <li>• 1/16 mil resolution</li> <li>• Additional 2 film drawers (up to 3 total)</li> <li>• Unload to a light-tight box</li> </ul>	<ul style="list-style-type: none"> <li>• 1/16 mil resolution</li> <li>• Additional 2 film drawers (up to 3 total)</li> </ul>	<ul style="list-style-type: none"> <li>• 1/16 mil resolution</li> <li>• Additional 2 film drawers (up to 3 total)</li> </ul>
<b>Upgrade</b>	To LP-9008m US and LP-9008m UR models	To LP-9008m UR model		To LP-9008i HS or LP 9008i US model	To LP-9008i US model	
<b>Physical Dimensions (without Unloader)</b>	67.0"W x 48.8"D x 59.0"H, 1800 lbs (170 cm x 124 cm x 150 cm, 800 kg)					

- The LP-9008 system is a class 1 laser product. Laser Specification: Red laser diode, 675 nm, 20 mWatt max power or Red laser diode, 660-664 nm, 30 mWatt max power
- Min. line width and accuracy depends upon film type and developing
- Specifications are subject to change without notice
- Pictures are for illustration only

[www.orbotech.com/pcb](http://www.orbotech.com/pcb)



**Orbotech Ltd.**  
P.O. Box 215  
Yavne 81102  
Israel  
Tel. 972 (8) 942-3533  
Fax. 972 (8) 942-3966

**Orbotech Japan Ltd.**  
LS Bldg., 1-1-17,  
Kami-Osaki  
Shinagawa-ku,  
Tokyo 141-0021  
Japan  
Tel: (81) 3-3280-1300  
Fax: (81) 3-3280-1121

**Orbotech Inc.**  
44 Manning Road  
Billerica, MA 01821  
U.S.A.  
Tel. (978) 667-6037  
Fax. (978) 667-9969

**Orbotech S.A.**  
62, Rue de la Fusee  
1130 Brussels  
Belgium  
Tel. 32 (2) 727-4811  
Fax. 32 (2) 727-4848

**Orbotech Pacific Ltd.**  
Room 2206-10  
China Resources Bld.  
26 Harbour Rd., Wanchai  
Hong Kong  
Tel. (852) 2827-6688  
Fax. (852) 2827-6699