Z-LASER

carter products

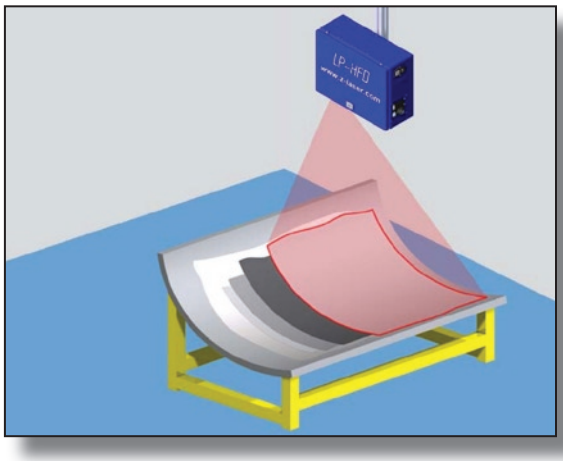
LP HFD

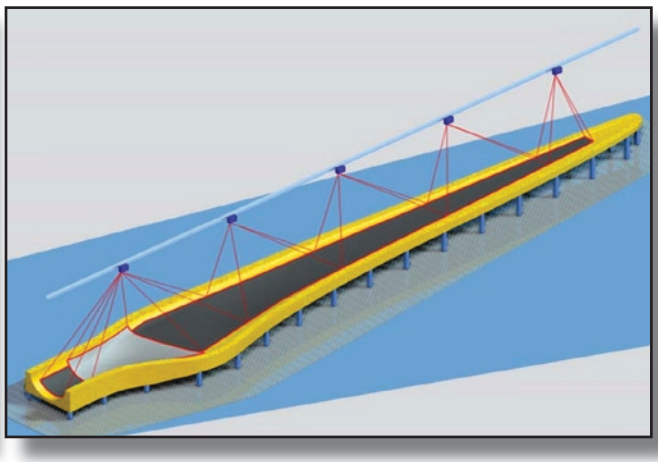
2D/3D Laser Projector

- Repetition rate: 50 Hz
- Optimized for 3D
- Optional extendable air cooling
- Highest accuracy of projection: 0.5 mm per 1m projection distance
- Multi-projection system for large and complex projections

The new Laser Projector LP-HFD from Z-Laser is optimized especially for complex positioning applications. It provides interfaces for all common 3D-CAD programs to display contours on curved surfaces. The Laser Projector combines the advantages of contour templating and computer control to automate the manufacture of complex composite parts that conventionally require extensive hand lay-up. Using the new LP-HFD can dramatically reduce cycle times, costs and manual rework of composite plies.

***Bright and highly visible red or green laser light**, any contour, pattern or shape can be displayed precisely on any planar or curved surface*
***High repetition rate** allows flicker free projection patterns for placing fiber mats, working pieces like balsa core, stiffeners or vacuum pods*
***Project letters, text strings or numbers** to define a special projection pattern more precisely; **Project the whole contour** or single elements*
***Compact housing** permits easy integration; **Ethernet data communication,** wireless LAN or serial connection also available*
***Eliminate manual measuring** with high accuracy patterns; **Projection control software can be adapted** to any customer needs*
***Match application requirements** with pop-up windows, info fields and custom buttons; **WINDOWS API** hooks available*
***Control via push button remote control** with programmable, multiple function buttons*
***Optional integrated Laser Menu** called by interrupting the Laser contour with a simple reflector; displays laser generated control icons*
***Use as stand-alone unit or in an array** of projectors for displaying large production pieces such as fuselages, wings or rotor blades*
***Laser Projector Manager (LPM) software** can process all graphical data; **Control position, height and rotation** of projection pattern*
Control via mouse**, trackball, or keyboard; **2D or 3D data import modules** allows processing of **HPGL, DXF and PLY
3D data in IGES, DXF and STL** formats can be prepared for projection using **LPM-Vector CAD software
***DXF import module** supports lines, polylines, circles, arcs, texts or blocks and is adaptable; **optional 3D and spline versions** are available*
***Plot Buffer option** provides 99 dynamic plot buffers permitting direct layer to buffer mapping, allowing any combination of layers to be shown*
***Optional DXF-Changer** module allows pattern to be shifted, rotated, or offset in height then saved as new DXF file with all offsets retained for future projection*
***Import modules for most common CNC routers** for use where finishing of composite work pieces is done by CNC*
***NC-formats such as NUM, OSAI, Sinumeric, BWES or Fanuc** allow Laser projection to be directly driven by CNC data*
***G-Code filters** directly interpret machine travel ranges, cycles, plane sections and cutter compensations, producing HPGL-commands for the Laser*
***"LPM-Teach" module** allows manual digitizing of part contours using mouse driven laser cursor, then saves the data as an HPGL file for future projection*





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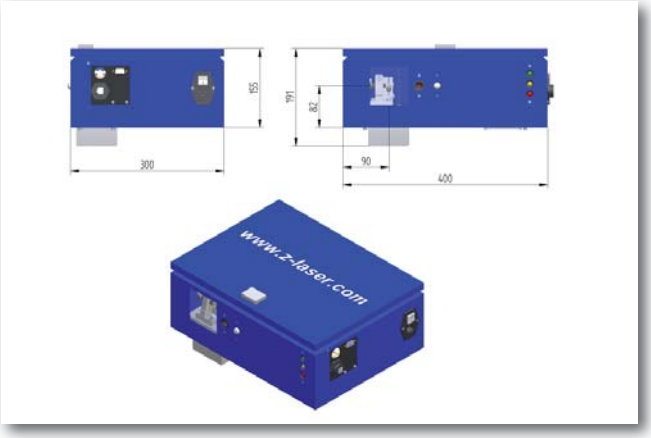
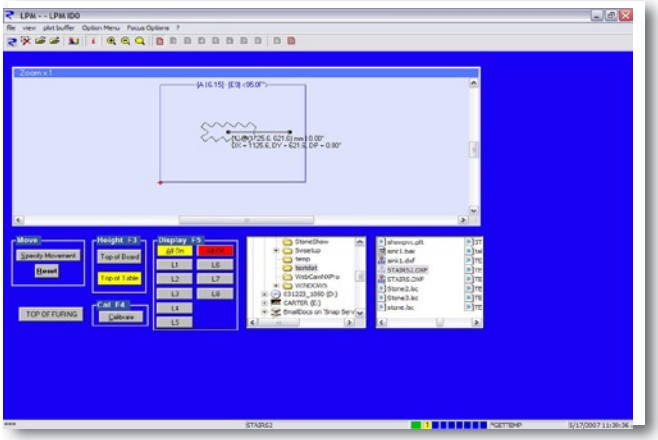
LP-HFD SPECIFICATIONS





Housing	Dimensions (mm)	400 x 300 x 155 (193 including fan)
	Protection class	IP 40
	Weight	12 kg
Voltage	Input voltage	115/220 VAC, 50-60Hz
	Power consumption	- Standby: approx. 45W, - In operate < 170W
Data transfer	Type of connection	Ethernet / Serial
	Serial (without converter)	RS232 / V24 (10m)
	Serial (with converter)	fiber glass / RS485 / Bluetooth
	Ethernet	Ethernet TP, 100 Base TX, cable or WLAN
	Software	LPM
	Format of graphics without LPM	HPGL / HPGL 3D
Laser Source	red	modulatable diode laser red, λ = 635nm ± 5nm
	green (optional)	modulatable DPSS laser green, λ = 532nm
	Output power	15mW
	Laser class	3A (2M)
Projection	Accuracy of projection (typical) passive cooling	0.5 mm/m (at 23°C and optical angle 70°)
	Optical angle/axis	40° x 40°, max. 80° x 80°
	Theoretical refresh rate	50Hz
	Optical resolution	1/1600 calculative
	Projection	arbitrary polygons
Conditions for installation	Working temperature	min. 5°C / 41° F
	- Passive cooling	max. 40°C / 104°F
	- active cooling (optional)	max. 60°C / 140°F (fan & air hose)
	Humidity	< 80% relative, not condensing

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