

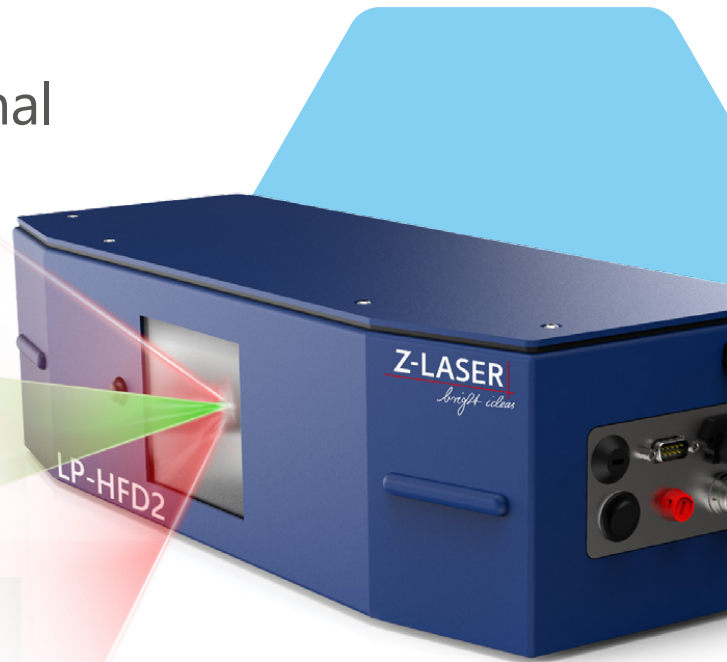
# Model LP-HFD2

## High-power laser with thermal management

The LP-HFD2 is the successor of our reliable laser projector LP-HFD. In addition to the new housing, stated IP65, the development has been focused on temperature stability in particular.

Fiber-coupled lasers (with red and/or green laser source) are applied with an output power of 7 mW. When requested, output power up to 14 mW is possible. With our standard optic, we achieve a focus range of 0.5m to 7m. Optionally, our tele-optic enables a working distance of up to 14m. For higher ambient temperatures there are several cooling options available such as extended air hose or water cooling system.

Typical data connection is Ethernet, more communication options via PROFINET or serial connection are also possible.



Fan angle up to 80°



Optimized for 2D and 3D projection



Integration into multiprojector systems



Improved thermal management



IP65



Wavelength: 520 nm 638 nm

## Highlights

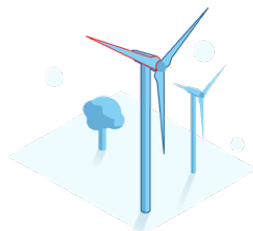
- Very exact, fast and stable laser projection
- Large fan angle enables large operating range (up to 80° x 80°)
- Optional extended air hose and water cooling
- Optimized for projection on 3D objects
- Industrial IP65 housing
- Serial or Ethernet interface
- High performance by fiber-coupled laser technology
- Improved thermal management
- Integration to a multi projection system
- Operating up to 60 °C ambient temperature with water cooling



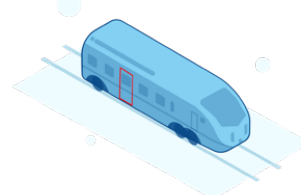
Aerospace



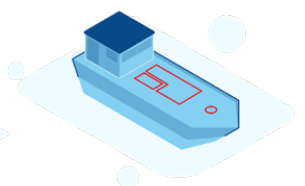
Automotive



Composite



Train Construction



Ship Building

## System specifications

Laser source
Wavelength
Output power
Laser class (on EN 60825)
Special features of the model
Fan angle
Accuracy <sup>(2)</sup> (depends on projection distance)
Focus range
Frequency of projection
Weight
Dimensions (L x W x H)
IP protection class
Laser operation mode
Electrically adjustable focus

Fiber-coupled red or green laser diode

520 nm		638 nm
7 mW <sup>(1)</sup>	14 mW	7 mW <sup>(1)</sup>
2M	3R	2M
Standard	High Precision	Tele-optic
80° x 80°	60° x 60°	60° x 60°
0.25 mm/m	0.1 mm/m	0.2 mm/m
0.5 m up to 7 m (standard focus)		Up to 14 m

Max. 50 Hz (depends on the projection)

7.3 kg (plus ca. 1.4 kg for separate power supply)

500 x 200 x 141 mm (181 mm incl. fan)  
19.685 x 7.874 x 5.551 in (7.126 incl fan)

IP65

APC

optional

## Software / handling

Software
Graphics format

LPM

HPGL / HPGL 3D

## Accessories

Remote control
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Optional (standard or industrial)

## Electrical specifications

Operating voltage
Protection class electrical
Electrical isolation
Interfaces
Power consumption (typical)

24 VDC ±5%

3 (protective low voltage)

Potential-free housing, connection to GND through 500 kΩ

1. Ethernet TP, 100 Base TX Cat5/Cat6
2. RS-232 IV24 (max. cable length)
3. Profi Net external optional, other fieldbus systems on request

50 W (max. 100 W)

## Ambient Conditions

Operating condition		
Storage temperature		
Humidity (max.)		
Working range in relationship to the mounting height (in mm)		
1.000		
2.000		
3.000		
4.000		
5.000		
6.000		
7.000		
8.000		
9.000		

+0 °C up to +50 °C (with passive cooling)

+0 °C up to +60 °C (with cooling air hose)

-20° C up to +70 °C

< 80% relative, non-condensing

	Optical angle 76° (in mm)	Optical angle 60° (in mm)
	1.562	1.155
	3.125	2.309
	4.687	3.464
	6.250	4.619
	7.812	5.774
	9.375	6.928
	10.938	8.083
	12.500	9.238
	14.063	10.393

<sup>(1)</sup> (TÜV CDRH certified nominal at beam exit)

<sup>(2)</sup> (At 28° C block temperature, optical angle 70° and 0° inclination)