

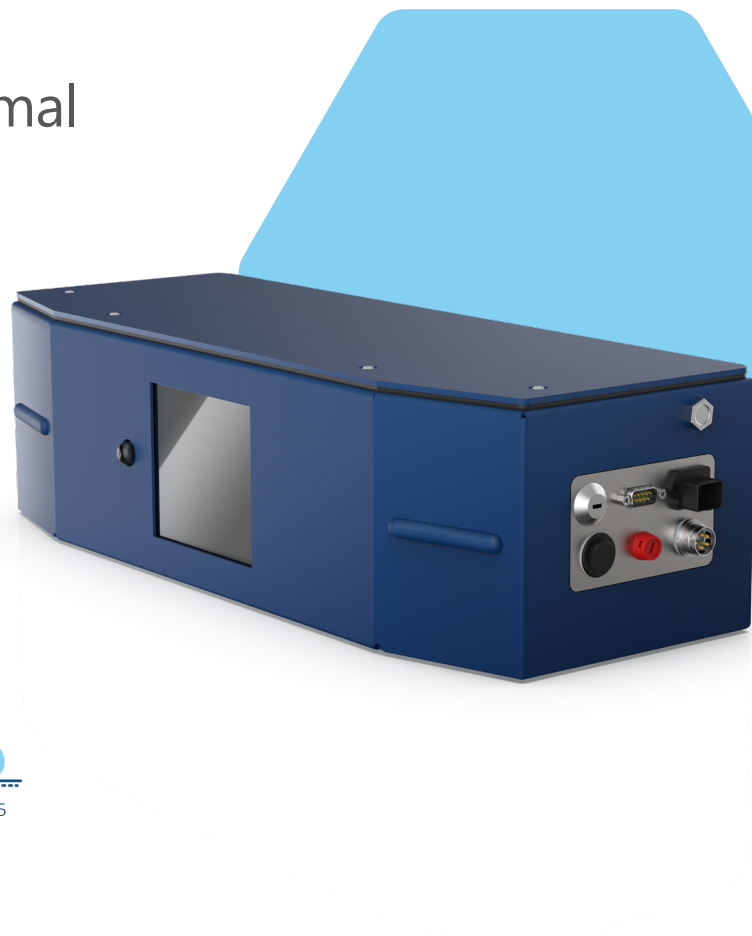
Model LP-HFD2

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 28 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



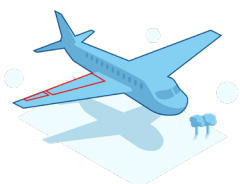
Improved thermal
management



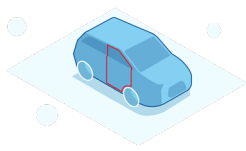
IP65

Highlights

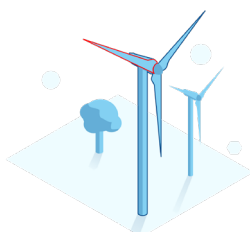
- Very exact, fast and stable laser projection
- Optimized for projection on 3D objects
- High performance by fiber-coupled laser technology
- Large fan angle enables large operating range (up to 80° x 80°)
- Industrial IP65 housing
- Improved thermal management
- Operating up to 60 °C ambient temperature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



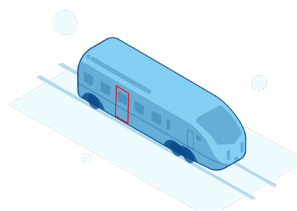
Aerospace



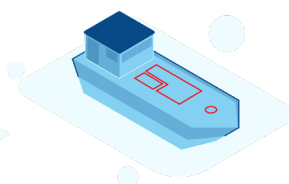
Automotive



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 ⁽²⁾ (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 ⁽¹⁾ | 14 mW | 7 mW ⁽¹⁾ | 28 mW |
| 2M | 3R | 2M | 3R |
| 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 |
|----------------|

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)
 +0 °C up to +60 °C (with adaptive water cooling)

-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 |

⁽¹⁾ (TÜV CDRH certified nominal at beam exit)⁽²⁾ (At 28° C block temperature, optical angle 70° and 0° inclination)