

ZEPHYRUS Blue

HIGH POWER FIBER COUPLED BLUE 450nm LASER SYSTEM



ZEPHYRUS is a fiber coupled laser system that delivers up to **200W CW @450nm**.

Thanks to the strong absorption of blue radiation by many materials, such as highly reflective solder compound, organic tissues and substrates, it represents a breakthrough in laser technology and opens to new and **sustainable** applications and markets, such as improvements in PCB manufacturing or weeding in the agricultural market and many more.

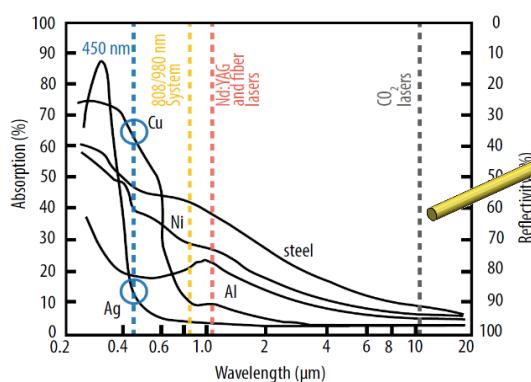
The **blue 450nm** radiation is strongly absorbed by the highly reflective materials used in PCB manufacturing process - up to 20x compared to IR wavelengths - ZEPHYRUS delivers unmatched performance in soldering THT and SMD components and trimming. The high absorption grants lower power and time required to perform the job, as well as minimum unwanted reflections from the solder pad, thus leading to a fast and safe process.

Blue laser radiation is strongly absorbed by organic materials, thus being a breakthrough solution in the weeding process in the agricultural market.

It's available as an OEM laser module or as an integrated unit, that includes the ZEPHYRUS PLATFORM BLUE module, plus the laser driver, the cooling plate for water cooling and the optical fiber.

- **SOLDERING OF THT, SMD COMPONENTS**
 - Up to 50% less power consumption than traditional IR lasers
 - Up to 60% faster soldering of THT and SMD components
 - Lower thermal stress on solder pads
 - Minimized unwanted reflections from highly reflective solder surfaces
- **TRIMMING / WELDING**
- **CARDBOARD / PAPER / WOOD / LEATHER MARKING & CUTTING**
- **LASER WEEDING** 
 - Strong absorption by chlorophyll a and b
- **THIN COATING ABLATION**
- **ILLUMINATION**

- Ready for integration, OEM module or Integrated Unit
- Focusing head or scan head for various beam shaping
- Multi-wavelength /custom specifications available



TECHNICAL SPECIFICATIONS

		ZPH35	ZPH50	ZPH100	ZPH200
Wavelength (nominal)	nm		450nm		
Wavelength range	nm		440 / 460		
Output power	W	35	50	100	200
Fiber core (min)	µm	100	200	200	200
Fiber NA	-	0.22	0.22	0.22	0.22
Fiber connector	-	FC	D80	D80	D80
Operating current	A	< 3.8	< 3.8	< 3.8	< 3.8
Operating voltage (1 channel)	V	< 40	< 30	< 30	< 30
N° of channels		1	2	4	8
Operating temperature (*)	°C		+15 / +30		
Storage temperature (*)	°C		-20 / +60		
Cooling (module only)		Air/Water	Water	Water	Water
Cooling (system)		Water	Water	Water	Water
Available or customizable Options		Different fiber types Fixed or variable focusing heads Coupling into scanning head			
		PCB soldering Plastic Welding Pumping Surgery	PCB soldering Plastic Welding Pumping Surgery	PCB soldering Soldering / Welding Stereolithography Weeding	Cutting Soldering / Welding Stereolithography Weeding
		Electronics Defense Medical	Electronics Defense Medical	Electronics Jewelry 3D printing Agricultural	Electronics Jewelry Battery Agricultural

Conditions unless otherwise stated: typical parameters at 25°C.

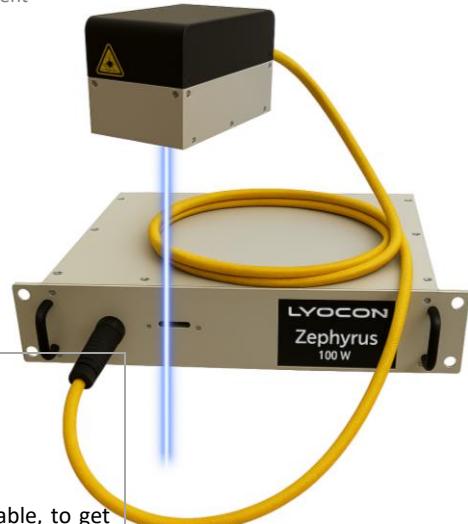
* Not-condensing environment

ACCESSORIES

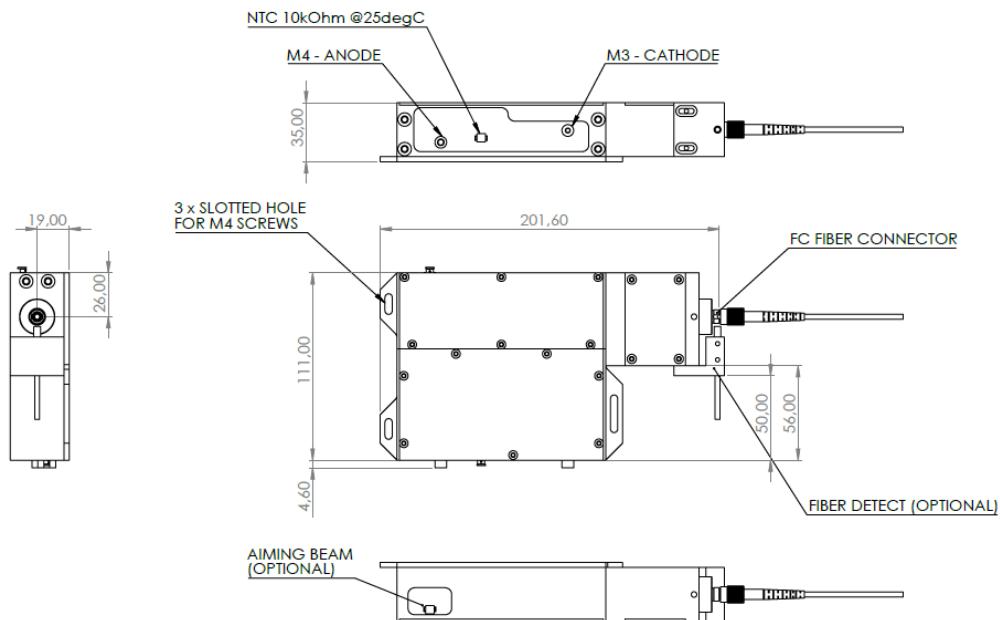
Available/customized accessories for ZEPHYRUS System are:

- Fixed or zoom focusing head
- Collimation optics for scan head interface
- In-line pyrometer and/or camera module for focusing head

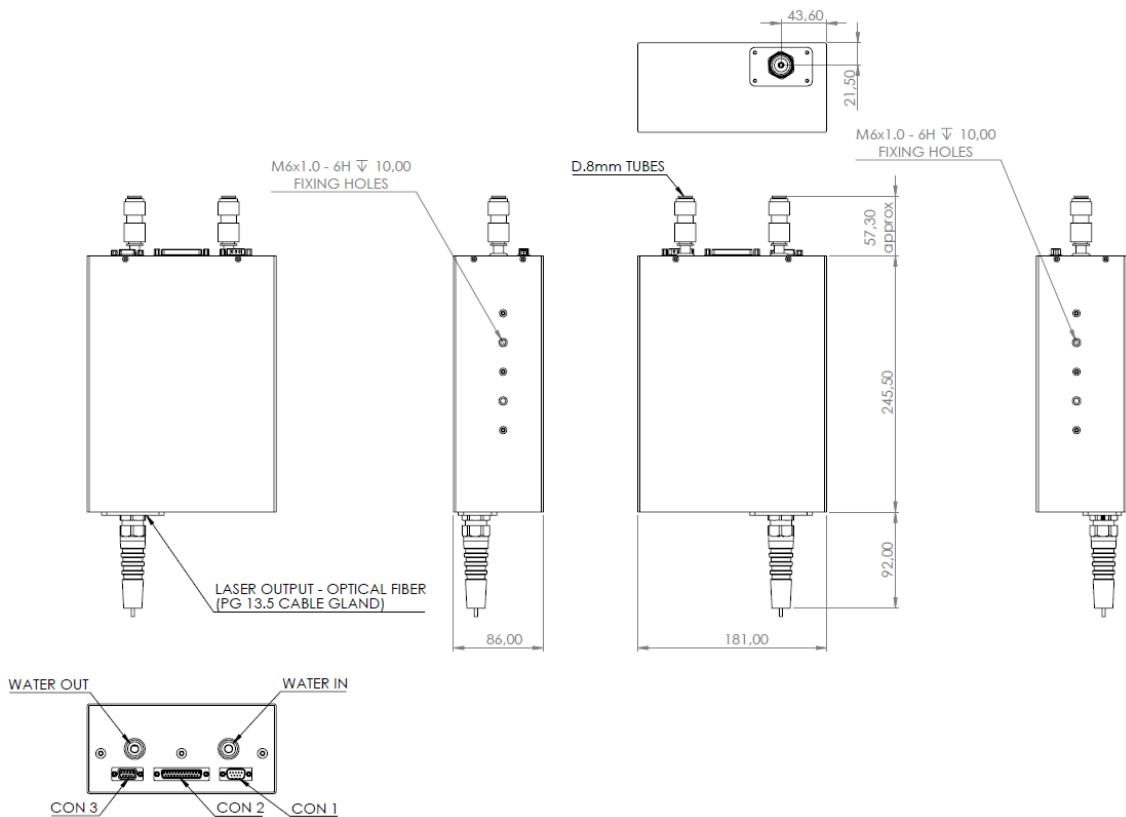
	<p>Standard design: 1- inch optics Spot size from 0,1 to 2mm Working distance from 40 to 200mm</p> <p>The optics of the focusing head are fully customizable, to get the best match in terms of spot size and distance for your application.</p>
	<p>Standard design: Scan head aperture 20mm Spot size from 0,2 to 2mm Scan area from 30x30 to 200x200mm</p> <p>Scan head aperture and optics are fully customizable, to get the best match in terms of spot size and distance for your application.</p>



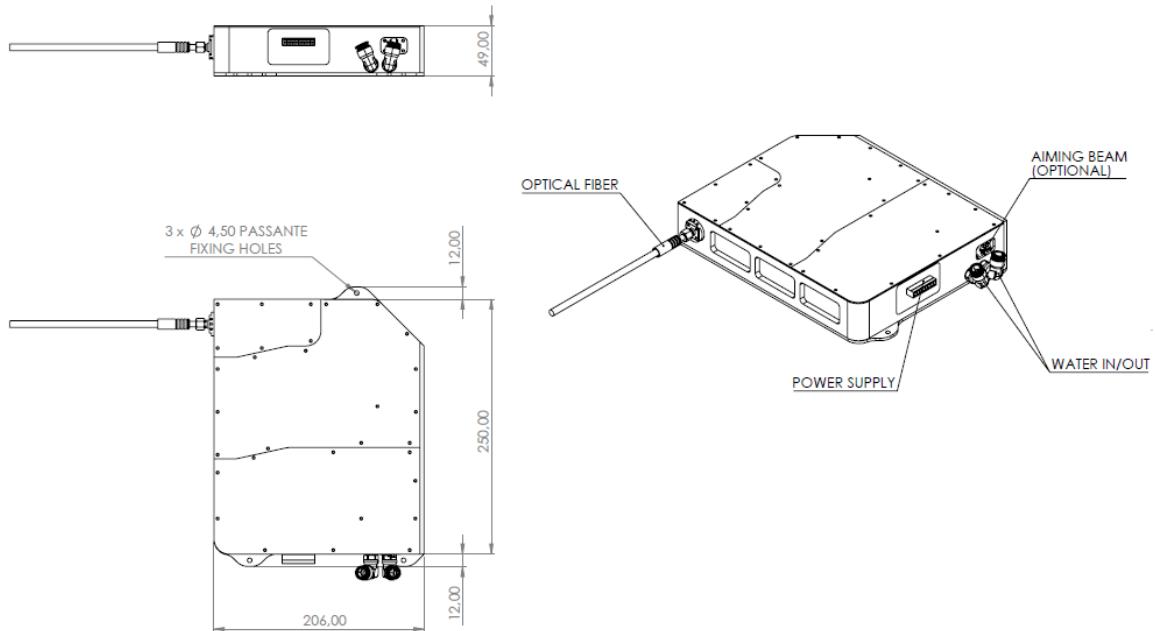
ZPH35 LASER MODULE



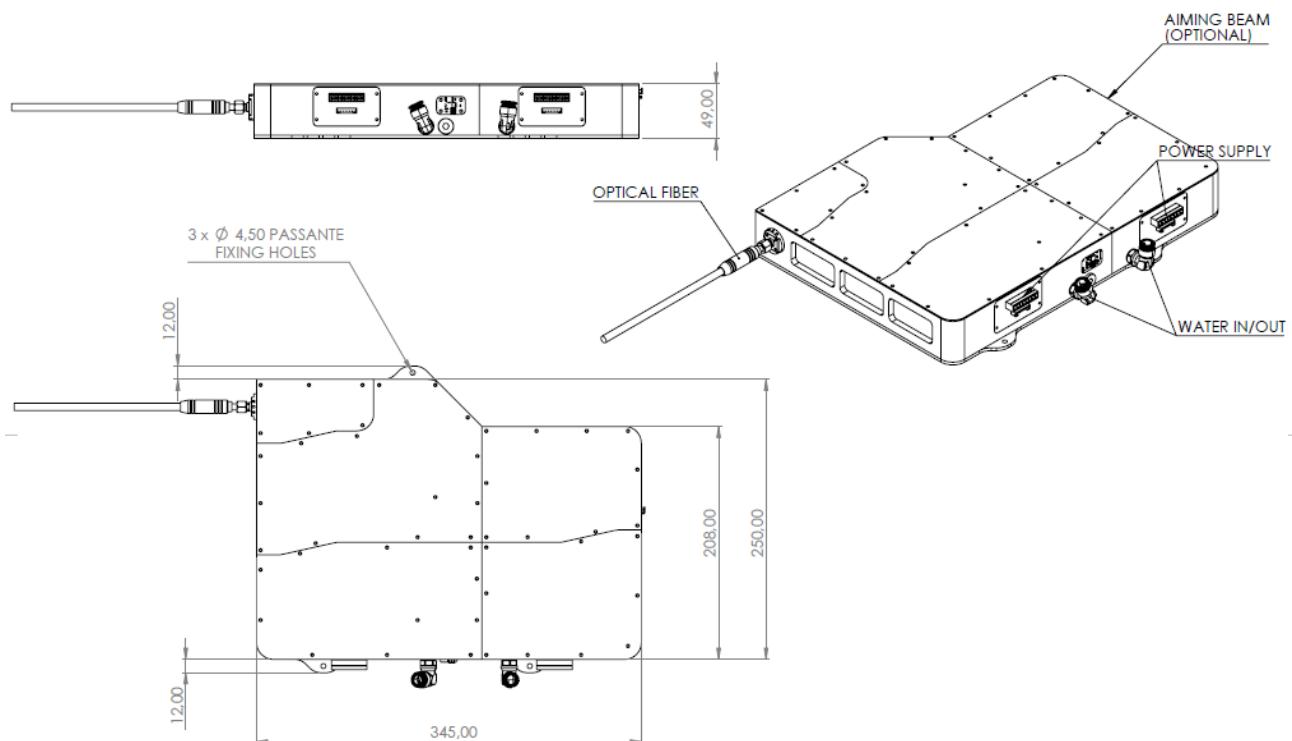
ZPH35 LASER SYSTEM



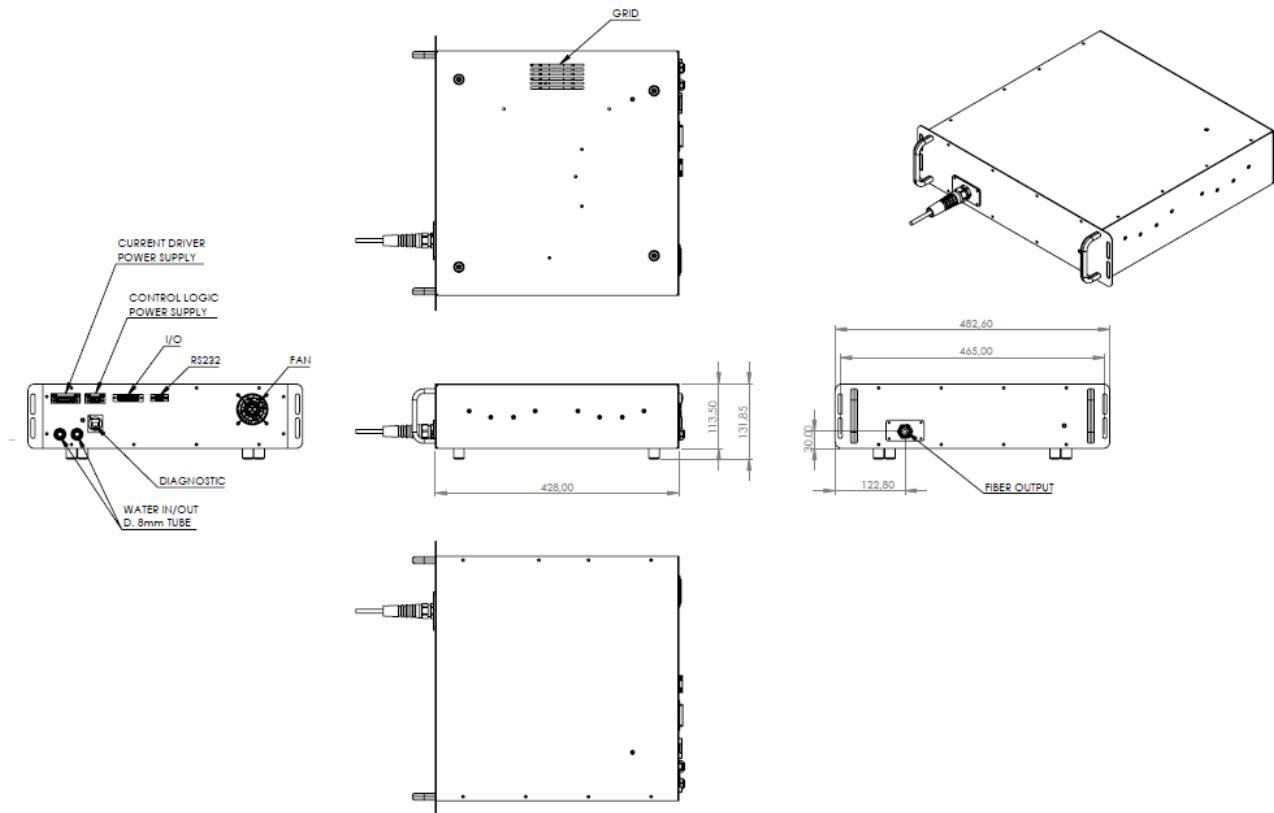
ZPH50 – ZPH100 LASER MODULE



ZPH200 LASER MODULE



ZPH50-100-200 LASER SYSTEM



APPLICATION TIPS

Find our application tips and insights at the following links:

- <https://www.lyocon.com/applications/blue-welding-soldering/>
- <https://onlinelibrary.wiley.com/doi/epdf/10.1002/phvs.202100036>

Lycocon aims to continuous improvement of its products, so specifications may change without notice. Class 4 Laser Product.