

Features

Easy-to-integrate system consists of a compact 19" (11HU including water-air-chiller), rack-mountable chassis, metal-armored fiber and imaging optics with protection glass. Can be combined with DILAS' processing heads offering camera and pyrometer options, and allowing the closed-loop operation of the system in pre-defined temperature ranges for quality relevant applications in medical device manufacturing and automotive.

Available with an optional fiber-input galvo-scanner featuring a field of operation in which the laser spot can be freely addressed.



Device Specification

Optical	Units	
Optical Output Power	W	400
Stability Over 24-hour (Cooling-Water $\Delta T = \pm 1K$)	%	± 2
Wavelength ¹	nm	980
Wavelength Tolerance ¹	nm	$\pm 10^1$

Pilot Laser

Wavelength	nm	650
Output Power	mW	<1

Fiber Parameters

Fiber Connector Type		Mode Strip SMA 905 with Free Standing Fiber Tips
Fiber Length ¹	m	5
Numerical Aperture	NA	0.22
Fiber Core Diameter	µm	800

Electrical Parameters

Operating Voltage	V	200-240 Single Phase
Frequency	Hz	50/60
Power Consumption	kVA	0.77
Overall Efficiency	%	>6
Max. Rep Rate	Hz	500
Min. Pulse Width	µs	200
Min. Rise/Fall-Time	µs	150

Thermal Parameters

Temperature Ambient in Operation (100% duty cycle)	°C	15 to 40 (Non-Condensing)
Storage Temperature	°C	5 to 50

Mechanical

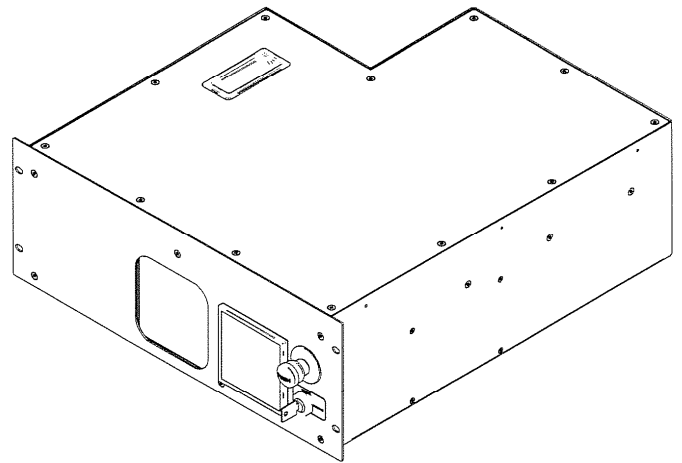
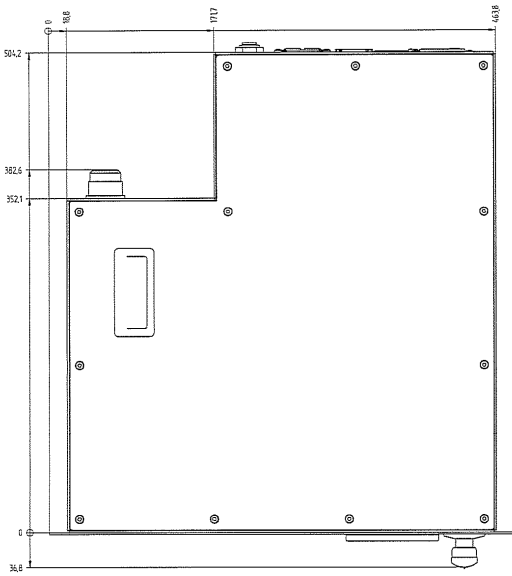
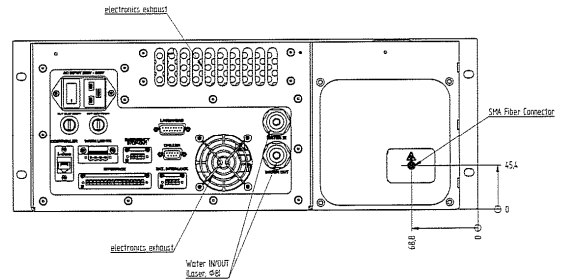
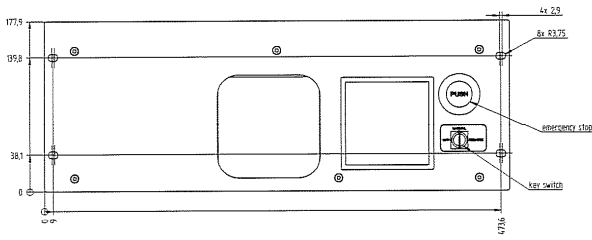
Dimension (Including Water/Air-Chiller) [w x h x d]	mm ³	483 x 487 x 630
Weight (Including Water/Air-Chiller)	kg	65
Noise Emission	dB(A)	<70

Package Includes

¹ COMPACT Laser Unit: 5m length¹, water-air chiller, 2 warning lights and focusing unit PHFQ0 (f= 100mm). Consult the COMPACT Series Operating Instruction Manual for additional information.

¹Consult DILAS Industrial Laser Systems for other available options.

Package Dimension



U.S. CFR Regulation

The manufacturer and subsequent sale of laser equipment is under the guidelines governed by the U.S. Center for Devices and Radiological Health (CDRH). In accordance to those guidelines, specifically Subchapter J of the Radiation Standards, 21 CFR, the diode laser is registered as a CLASS 4 laser product.

European Commission

In accordance to EN 60825, Safety of Laser Products, the diode laser is registered as a CLASS 4 laser product.

Products specifications are subject to change without notice. For handling precautions, please reference the general handling instruction manual. For additional information, please contact your local sales representative or visit our website at www.dilas-ils.com.

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Water-Air Chiller RK/W 800L

Features

- High cooling capacity
- Small size cabinet
- Easy to integrate into standard industrial mounting racks
- Easy serviceable spare parts access



Device Specification

Electrical Parameters		Units	
Operating Voltage		V	200-240 Single Phase
Frequency		Hz	50/60
Current Consumption	in Operation	A	3.9
	max.	A	6
Fuse	max.	A	10
Cooling Capacity		W	800
Heat Exchanger			V2A

Pump (NPY 50/60Hz)

Number of Pumps			1
Pump Capacity	Q_{max}	l/min	12
Pump Height	H_{max}	m	50
Rated Current for Pump		A	1.3

Other			
Water Tank Volume		l	8
Connectors for Supply/Return Line		"	3/8
Heating			./.
Temperature Controller			./.

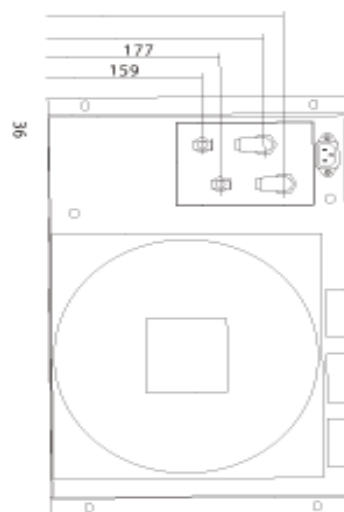
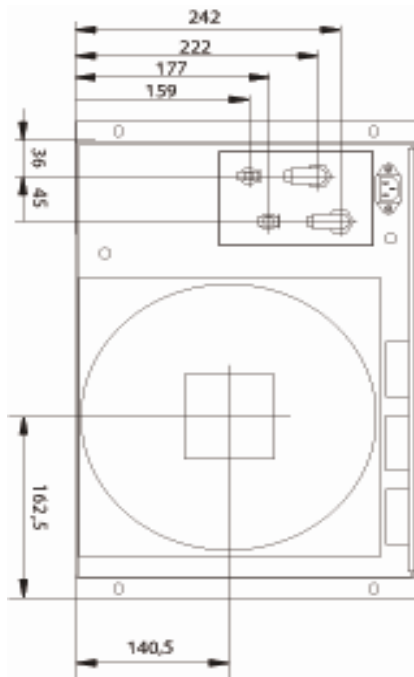
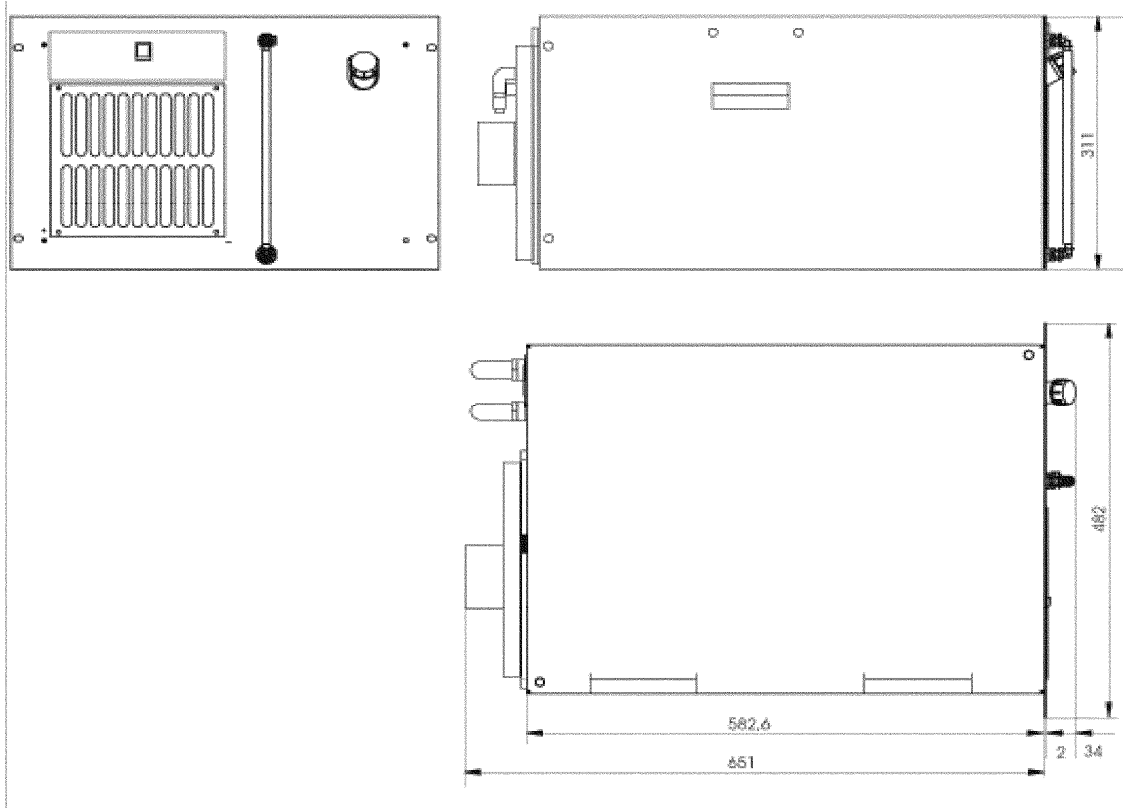
Mechanical			
Dimensions		mm	483 x 311 x 630
Weight	Empty	kg	~ 33
	with Water	kg	~ 41
Noise Emission		dB (A)	<57

(A-weighted equivalent continuous sound level)

Water-Air Chiller RK/W 800L¹

¹Only use Water-Air Chiller RK/W 800L with the COMPACT (Liquid-Cooled) Series

Package Dimension



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800µm Fiber, NA 0.22, SMA/SMA

Features

- Free standing fiber tip
- High centricity

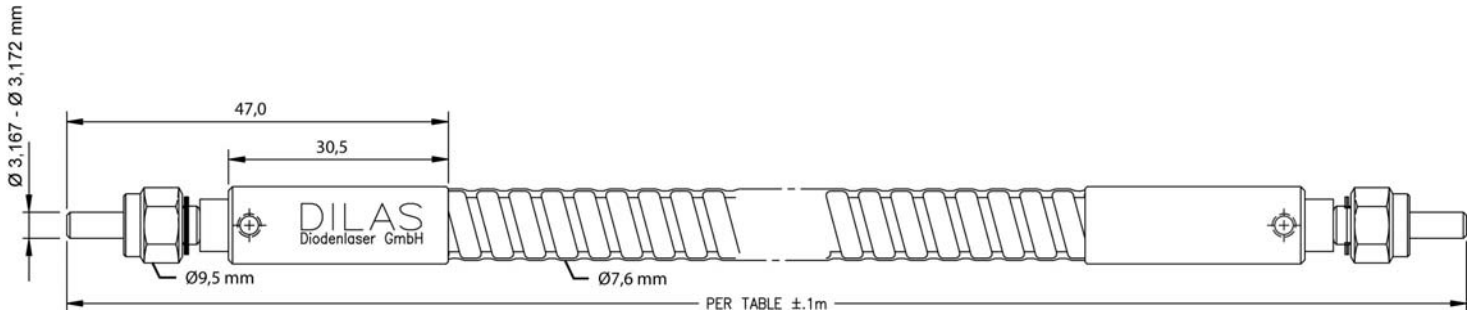


Device Specification

Parameter	Units	
Connector Type		SMA 905 both sides, with Free Standing Fiber Tip.
Ferule Diameter	mm	3.167 – 3.172
Outer Diameter (Largest Diameter at Connector)	mm	9.5
Cable Diameter	mm	7.6
Fiber Length ¹	m	2 or 5 ± 0.1
Numerical Aperture	NA	0.22 ± 0.02
Core Diameter	µm	800 ± 16
Cladding Diameter	µm	880 ± 18
Centricity	µm	<6
Long Term Bending Radius (Coil Radius)	mm	min. 176
Short Term Bending Radius	mm	min. 88

¹Others on request.

Dimensions



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Processing Head (PHFS0) COMPACT Series Diode Laser System

Features

This processing head with $f=100\text{mm}$ (standard focal length)¹ is intended to be used with COMPACT Series, along with a SMA fiber coupling. The processing head is connected to the diode laser using a SMA fiber, NA 0.22.

Having a compact housing and the mounting thread M40x1 this processing head can easily be integrated into the laser process.



Device Specification

Optical		Standard		Optional	
Connector		SMA-905	SMA-905	SMA-905	SMA-905
Numerical Aperture	NA	0.22	0.22	0.22	0.22
Focal Length	mm	100	60	50 ³	38 ³
Working Distance (Stand Off) ¹	mm	95	54	38	25
Output Aperture	mm	40	40	40	40

Weight					
	kg	0.36	0.36	0.36	0.36

Fiber	μm	800	800	800	800
Focal Size ²	mm	1.2 ± 0.05	0.8 ± 0.05	0.6 ± 0.05	0.5 ± 0.05

Fiber	μm	400	400	400	400
Focal Size ²	mm	0.6 ± 0.05	0.4 ± 0.05	0.3 ± 0.05	0.25 ± 0.05

Fiber	μm	200	200	200	200
Focal Size ²	mm	0.3 ± 0.05	0.2 ± 0.05	0.15 ± 0.05	0.12 ± 0.05

¹Others on request.

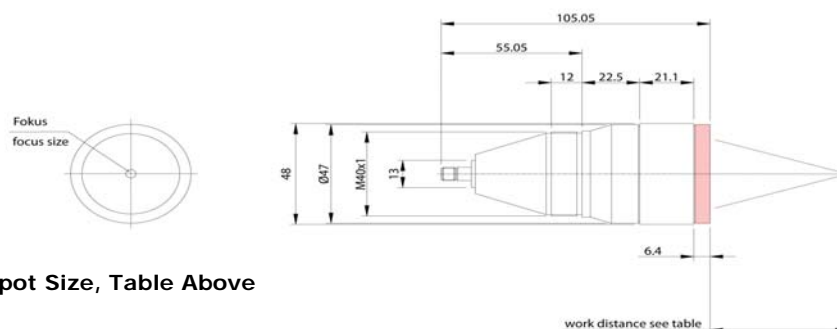
²Focal dimensions of diode lasers can deviate in practice depending on measuring method by $\pm 10\%$.

³With additional meniscus lens adapter.

⁴For standard focal length $f=100$

Dimensions⁴

Length	mm	105.05
Diameter	\emptyset	48



Spot Size, Table Above



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