

	<b>SPECIFICATION</b> <b>YTTERBIUM LASER SYSTEM</b> <b>Model YLS-30000-Y19</b>	Spec:	G22-253045
		Revision:	--
		Issue date:	30.07.19
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## 1. Optical characteristics

N	Characteristics	Test conditions	Symbol	Min.	Typ.	Max.	Unit
1	Operation Mode			CW / Modulated			
2	Polarization			Random			
3	Nominal Output Power		$P_{nom}$	30000			W
4	Output Power Tuning Range			10		105	%
5	Emission Wavelength	Output power: 30000 W	$\lambda$	1068		1080	nm
6	Emission Linewidth	Output power: 30000 W	$\Delta\lambda$		3	6	nm
7	Switching ON/OFF Time	Output power: 30000 W			50	100	$\mu$ s
8	Output Power Modulation Rate	Output power: 30000 W				5	kHz
9	Output Power Instability	Output power: 30000 W Time interval: 8 hrs (T=Constant)			$\pm 1$	$\pm 2$	%
10	Red Guide Laser Power				0.4	0.5	mW

## 2. Optical output

N	Characteristics	Test conditions	Symbol	Min.	Typ.	Max.	Unit
1	Delivery Fiber Connector			HLC-16, IPG standard			
2	Beam Parameter Product* (86 %)	Delivery fiber core diameter 100 $\mu$ **	BPP*		3.8	4.5	mm*mrad
3	Beam Parameter Product* (86 %)	Delivery fiber core diameter 150 $\mu$ ***	BPP*		5.5	7.0	mm*mrad
4	Beam Parameter Product* (86 %)	Delivery fiber core diameter 200 $\mu$	BPP*		7.5	9.0	mm*mrad
5	Delivery Fiber Length**		L	10**	20	30***	m
6	Delivery Fiber Bending Radius - unstressed - stressed		R	100 200			mm

\* Measurement accuracy by means of Primes Focus Monitor  $\pm 10$  %

\*\*Maximal delivery fiber length is 10 m @ 100  $\mu$

\*\*\*Maximal delivery fiber length is 20 m @ 150  $\mu$

## 3. General characteristics

N	Characteristics	Min.	Typ.	Max.	Unit
1	Operating Ambient Temperature Range	5		45	$^{\circ}$ C
2	Humidity, Ambient Temperature Range $\leq 40^{\circ}$ C	10		95	%
3	Storage Temperature without water	- 40		+ 75	$^{\circ}$ C
4	Dimensions, WxDxH:	856 x 806 x 1517			mm
5	Weight		550		kg

## 4. Cooling

N	Characteristics	Test conditions	Min.	Typ.	Max.	Unit
1	Method		Tap and slightly DI-water			
2	Cooling Water Temperature for Laser		20	21	22	$^{\circ}$ C
3	Cooling Water Temperature for Optics		27	30	33	$^{\circ}$ C

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4	Laser "Cold Start" Temperature		20			°C
5	Optics coling water conductivity		30	40	50	μS/cm
6	Water Pressure		3.0		4.0	bar
7	Water Flow for Laser Cooling		150	200		l/min
8	Fiber Connector Cooling Water Flow Rate		2.5	3.0	3.5	l/min

## 5. Electrical characteristics

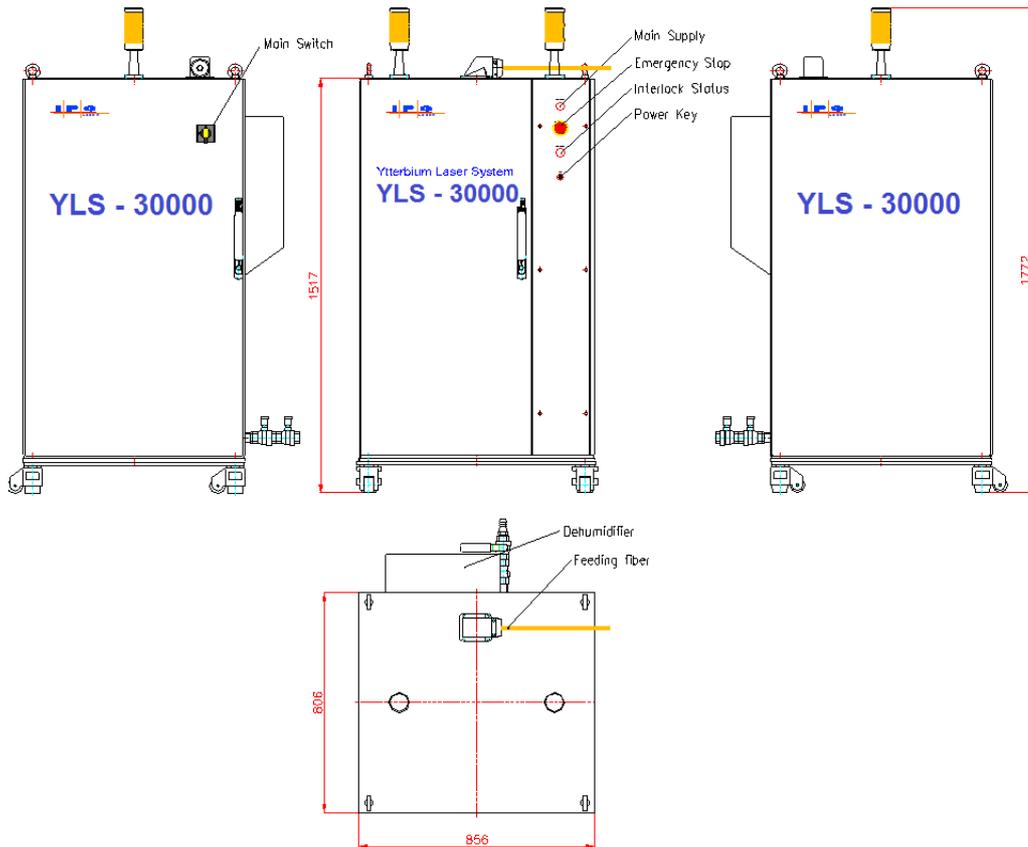
N	Characteristics	Min.	Typ.	Max.	Unit
1	Operating Voltage, 3 phases	400-460 V/3P + PE @ 50-60 Hz			
2	Laser Power Consumption at 30000 W power		75	86	kW
3	Laser Operation Current at 30000 W power and 400 VAC		128	146	A
4	Input fuses, 400 VAC			150	A

## 6. Option: Fast power supply.

6.1. Switching OFF of laser main power supplies during 130 msec accordingly  
Category 3 PL d EN ISO 13849-1

6.2. Maximal quantity of main power supplies switching ON/OFF cycles per minute is 20 times.

## 7. External layout



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