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}	4000			W
4	Output Power Tuning Range			10		105	%
5	Emission Wavelength	Output power: 4000 W	λ	1068		1080	nm
6	Emission Linewidth	Output power: 4000 W	Δλ		3	6	nm
7	Switching ON/OFF Time	Output power: 4000 W			50	100	µs
8	Output Power Modulation Rate	Output power: 4000 W				5	kHz
9	Output Power Instability	Output power: 4000 W Time interval: 8 hrs (T=Constant)			±1	±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-8, QBH-compatible LCA, QD-compatible			
2	Beam Parameter Product* (86 %)	Delivery fiber core diameter 50 µ**	BPP*		2.0	2.2	mm*mrad
3	Beam Parameter Product* (86 %)	Delivery fiber core diameter 100 µ	BPP*		3.3	4.0	mm*mrad
4	Beam Parameter Product*** (2^{nd} moment)	Delivery Fiber core diameter 100 µ	BPP*	3.51***			mm*mrad
5	Beam Parameter Product* (86 %)	Delivery fiber core diameter 150 µ	BPP*		5.0	6.0	mm*mrad
6	Beam Parameter Product* (86 %)	Delivery fiber core diameter 200 µ	BPP*		6.0	8.0	mm*mrad
7	Delivery Fiber Length**		L	10	20**	30	m
8	Delivery Fiber Bending Radius - unstressed - stressed		R	 100 200			mm

** Measurement accuracy by means of Primes Focus Monitor ± 10 %*
***Maximal delivery fiber length is 20 m @ 50 µ*
****BAFA criteria, the BPP value per 2^{nd} moment accordingly standard ISO 11146-1:2005*

3. General characteristics

N	Characteristics	Min.	Typ.	Max.	Unit
1	Operating Ambient Temperature Range	5		45	°C
2	Humidity, Ambient Temperature Range ≤ 40°C	10		95	%
3	Storage Temperature without water	- 40		+ 75	°C
4	Dimensions (w/o interface plugs, w/o castors), WxDxH:	430 x 808 x 700			mm
5	Weight		180		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	°C
3	Cooling Water Temperature for Optics		27	30	33	°C
4	Laser "Cold Start" Temperature		20			°C
5	Optics coling water conductivity		30	40	50	µS/cm
6	Water Pressure		2.5		3.5	bar
7	Water Flow for Laser Cooling		20	30		l/min
8	Fiber Connector Cooling Water Flow Rate		1.0	1.5	2.5	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 4000 W power		10.0	11.5	kW
3	Laser Operation Current at 4000 W power and 400 VAC			20	A
4	Input fuses, 400 V			25	A

6. Fast power supply option.

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