Product Test Sheet

Product Name: Erbium-Doped Fiber Amplifier
Product Code: STEDFA-C-BA-15-SM-B (LL-EDFA-BA-C-15-SMF-B)
Serial Number: 25101101

Specification	Unit	Min	Test Value	Max	Remarks
Operating Wavelength	nm	1530	1550	1565	
Optical Input Power	dBm	-6		3	CW
Optical Output Power	dBm		16.1	15	@ -3dBm input
Output Power Stability	-		P-P: ±0.76% RMS: 0.42%		@APC 15dBm, 60min
Noise Figure	dB			5	
Polarization dependent Gain	dB			0.3	
Polarization mode Dispersion	ps			0.5	
In /Out port Isolation	dB	35			
Operation Temperature Range	°C	-5		+45	
Operation Humidity Range	%			70	
Fiber Connector	-	FC/APC			
Input / Output Fiber Type	-	SMF-28e, Φ3mm×1m			
Power Supply	-	AC 100~240V			E.U Standard
Electrical Power Consumption	W	7			
Dimensions	mm	255(W)×285(D)×115(H)			Bench-Top
Remote Control Port	-	RS232-DB9			
Software Version		AmplifierController-V20240219			
Control Mode	-	ACC: Automatic Pump Current Control		Current Tuning Range: 0~200mA	
		APC: Automatic Power Control		Power Tuning Range: 5~15dBm	
		AGC: Automatic Gain Control		Gain Tuning Range: 10~25dB	

*Note:

1.If the input signal is a pulsed laser with a repetition frequency <300kHz, do not use the APC mode, only the ACC mode.

2.The AGC mode only takes effect within the power range defined by the APC mode.

3.Note: ISO 11554-2017

8 Evaluation

8.1 General

The standard deviation, s, from n readings m_i is calculated according to

$$s=\sqrt{\frac{\sum_{i=1}^{n}(m_i-\bar{m})^2}{n-1}} \quad (3)$$

Where the mean value is

$$\bar{m}=\frac{\sum_{i=1}^{n}m_i}{n} \quad (4)$$

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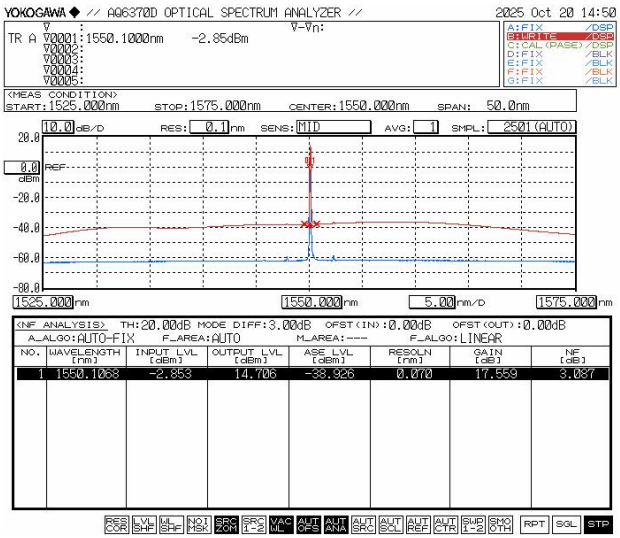
8.3 Power stability of cw lasers

Calculate the mean value of the power, $\bar{P}$, and the respective standard deviation, s, for the appropriate stability time domain (short-term, medium-short-term, medium-term and long-term) according to the specifications given in 7.3.

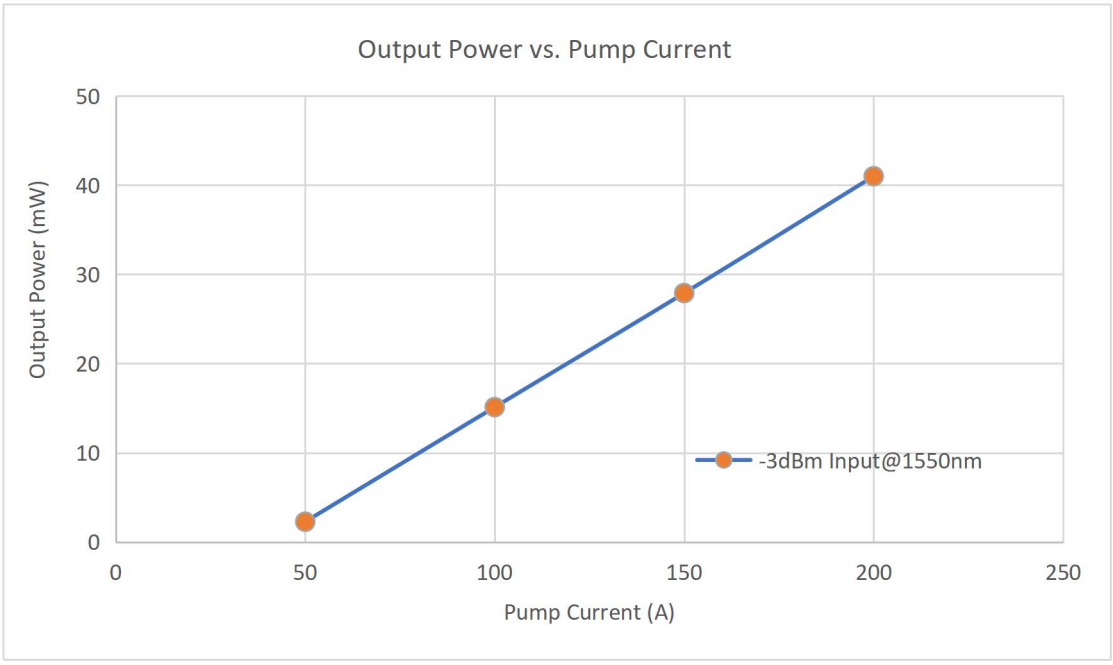
Power stability is given as the relative power fluctuation, ΔP, in the corresponding stability time domain calculated from Formula (9):

$$\Delta P = \frac{2s}{\bar{P}} \qquad (9)$$



Optical Spectrum of Amplified 1550.12nm signal

(-3dBm input power, 15dBm output power@200mA current)



Output Power vs. Pump Current Curve

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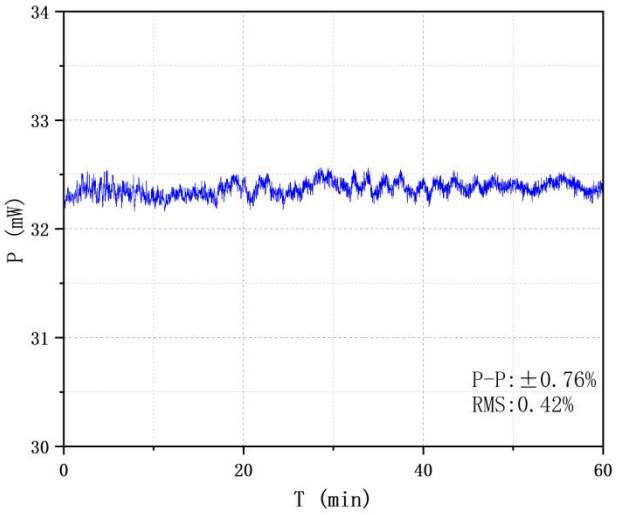

Power stability test @15dBm, -3dBm input, APC mode (THORLABS S146C)

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