Product Test Sheet

Product Information

Product Name	Ytterbium-doped Fiber Amplifier
Product Code	YDFA-27-PM-M3
Serial Number	25111705
Test Date	2025/12/08
Test Result	Pass
Tester	ZWL

Optical Specifications

Parameter	Unit	Target Value	Test Value	Test Result
Operating Wavelength	nm	1030~1070	1030~1070	√ Pass ☐ Fail
Optical Input Power	dBm	0~+10	0~+10	√ Pass ☐ Fail
Optical Output Power @0dBm Input	dBm	⩾27	27.4	√ Pass ☐ Fail
Noise Figure	dB	⩽5	⩽5	√ Pass ☐ Fail
Polarization Extinction Ratio	dB	-	25	√ Pass ☐ Fail
Power Peak Instability (P-P)	-	-	±0.43%@500mW，60min	√ Pass ☐ Fail
Power Instability (RMS)	-	-	0.26%@500mW，60min	√ Pass ☐ Fail
In/Out Port Isolation	dB	-	35	√ Pass ☐ Fail

Product Specifications

Operation Temperature Range	℃	-5~+50	
Operation Humidity Range	%	0~70	
Storage Temperature Range	℃	-40~+85	
Power Supply	-	DC 12V	E.U Standard
Electrical Power Consumption	W	13	Ambient Temperature 25℃
Fiber Connector	-	FC/APC	
Input/Output Fiber Type	-	PM980, 1 meter	
Optical Fiber Sleeve	-	2mm Loose tube, blue color	
Dimensions	mm	139(W)×235(D)×70(H)	Module
Remote Control Port	-	RS232-DB9	
Software Version	-	EDFAController- 10W- V20240531	
Control Mode	-	ACC: Automatic Current Control	Current Tuning Range: 0~3A
		APC: Automatic Power Control	Power Tuning Range: 17~27dBm

*Note: Power Instability: 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

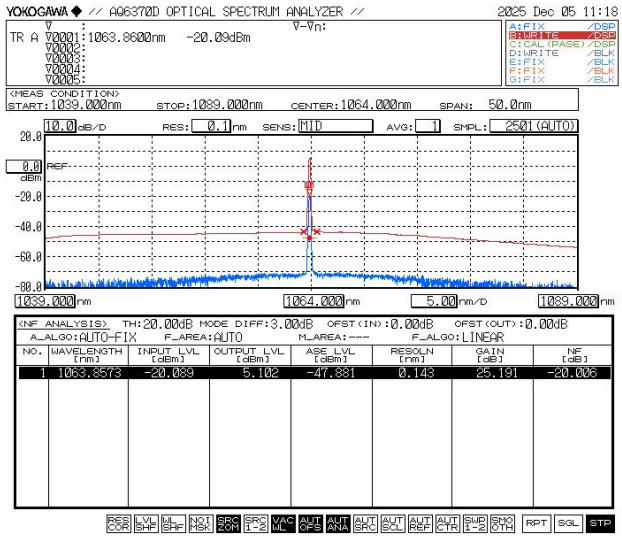
$$\bar{m}=\frac{\sum_{i=1}^{n}m_i}{n} \quad (4)$$

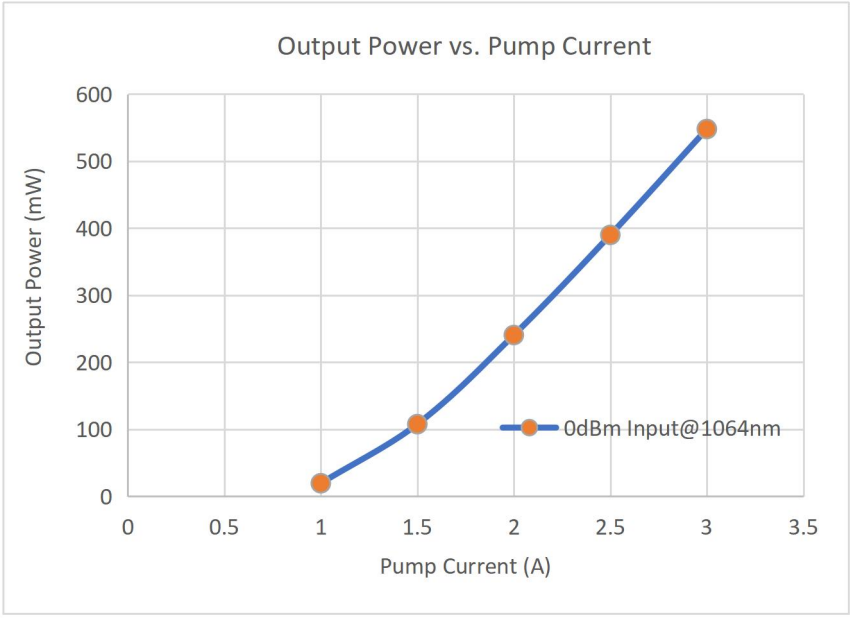
8.3 Power stability of cw lasers

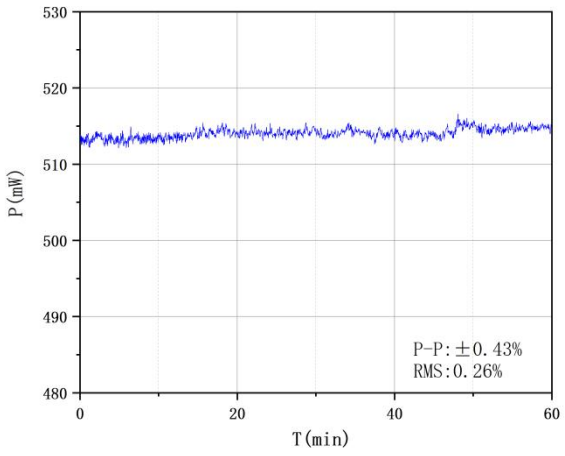
Calculate the mean value of the power, $\bar{P}$, and the respective standard deviation, s, for the appropriate stability time domain (short-term, medium-short-term, medium-term and long-term) according to the specifications given in 7.3.

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

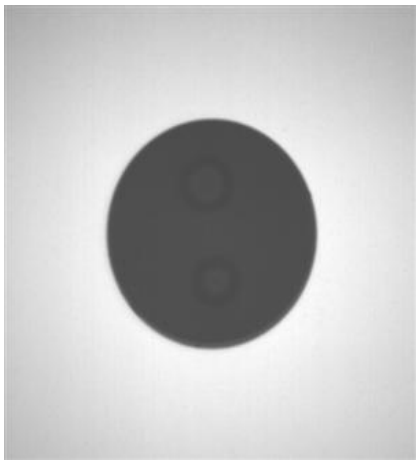
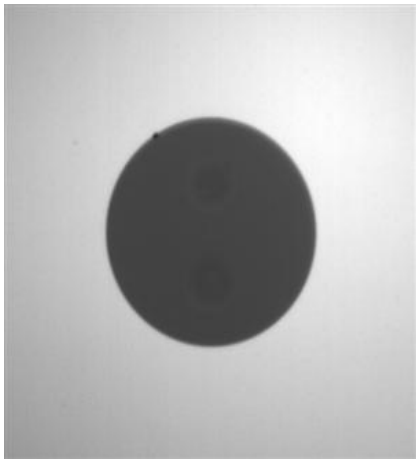
$$\Delta P=\frac{2s}{\bar{P}} \quad (9)$$

Spectral test	
Test item	EDFA spectrum and NF value
Test method	access to the spectrometer for measurement
Equipment	YOKOGAWA AQ6370D
Test result	 Optical Spectrum of Amplified 1064nm signal/ 0dBm input power,3A

Pump current and output power relation curve	
Test item	Pump current and output power relation curve
Test method	Measured by optical power meter
Equipment	Thorlabs PM100D/S146C
Test result	

Power instability test	
Test item	Output power and power instability
Test method	Measured by optical power meter
Equipment	Thorlabs PM100D/S146C
Test result	

Power instability@output power 27dBm, 0dBm input 1064nm, APC mode

Inspection of the fiber optic connector end face	
Test item	Integrity and cleanliness of optical fiber connector face
Test method	The optical fiber end face mirror is directly observed with a magnification of 400x.
Equipment	Hand-held End Face Detector/DL-AutoGet-V2
Test result	The output fiber end face is intact, free from scratches, and clean without dust or contamination, meeting all requirements.  (Input Port)  (Output Port)