Product Test Sheet

Product Information

Product Name	Single-wavelength Laser
Product Code	STFL-1550-500-PM-B (LL-FCL-CW-1550-500-PMF-B)
Serial Number	26042404
Test Date	2026/05/13
Test Result	Pass

Optical Parameters

Parameter	Unit	Requirement	Test Value	Test Result
Operating Wavelength	nm	1550±0.5	1549.7	√Pass ☐Fail
Output Power	mW	50~500mW	50~500mW	√Pass ☐Fail
Laser Linewidth@3dB	MHz	≤3	1.23	√Pass ☐Fail
Power Peak stability (P-P)	-	No requirement	±0.44%@500mW，60min	√Pass ☐Fail
Power stability (RMS)	-	No requirement	0.26%@500mW，60min	√Pass ☐Fail
Polarization Extinction Ratio	dB	-	25	√Pass ☐Fail

Product Specifications

Operation Temperature Range	℃	-5~+50	
Operation Humidity Range	%	0~70	
Storage Temperature Range	℃	-40~+85	
Power Supply	-	AC 100~240V	E.U Standard
Electrical Power Consumption	W	20W	25℃
Fiber Connector	-	FC/APC	
Input/Output Fiber Type	-	PM1550 Single Mode Fiber	Φ3mm×1m
Optical Fiber Sleeve	-	Loose tube(Φ=3mm), yellow color	
Dimensions	mm	255(W)×322(D)×115(H)	Bench-top
Remote Control Port	-	RS232-DB9	
Software Version	-	Laser Controller-V20250410	

SIMTRUM China
Telephone: +86 133 2643 0008
Email:info@simtrum.com

SIMTRUM Singapore
Telephone: +65 6996 0391
Email: info@simtrum.com

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

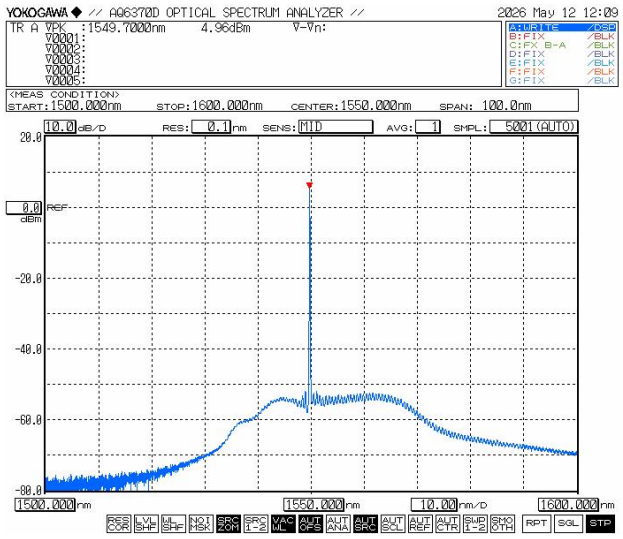
$$\bar{m}=\frac{\sum_{i=1}^{n}m_i}{n} \quad (4)$$

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	The spectrum of the Laser
Test Method	After 20dB attenuation,access to the spectrometer for measurement
Measurement Equipment	YOKOGAWA AQ6370D
Measurement Results	 Optical Spectrum@500mW

SIMTRUM China
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SIMTRUM Singapore
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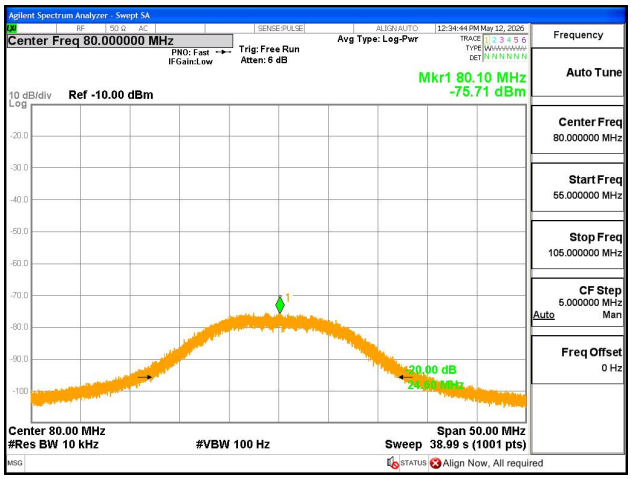
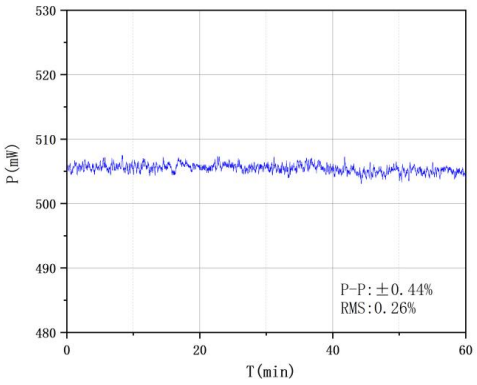
Laser Linewidth	
Test item	Laser Linewidth
Test method	Delayed selfie method for measuring photocurrent spectrum
Equipment	KEYSIGHT MXA Signal Analyzer N9020A
Test result	 Laser Linewidth@3dB: 1.23MHz

Power Stability Test	
Test Item	Laser Power and Power Stability
Test Method	Direct Measurement with Optical Power Meter
Measurement Equipment	Thorlabs PM100D/S146C Power Meter
Measurement Results	 Power Stability Test@500mW

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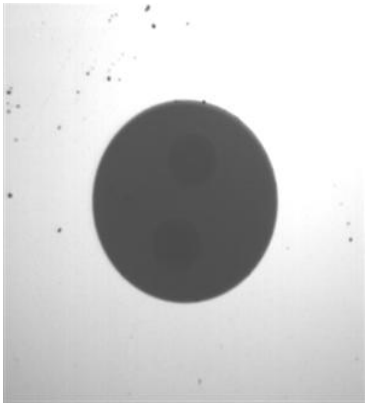
Inspection of the fiber optic connector end face	
Test item	Integrity and cleanliness of optical fiber connector face
Test method	The optical fiber end face mirror is directly observed with a magnification of 400x.
Equipment	Hand-held End Face Detector/DL-AutoGet-V2
Test result	The output fiber end face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

SIMTRUM China
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