

# Product Test Sheet

Product Name: Single Frequency Narrow Linewidth Laser

Product Code: NLFL-1550-50-T-SM-M

Serial Number: 25082104-1

	Unit	Specification	Remarks
<b>Optical Parameter</b>			
Operating Wavelength	nm	1549.84-1550.26	@50mW, 20°C-35°C
Laser Line-width	kHz	2.12	@3dB
Output Power	mW	5-50	
Output Power Stability	-	P-P: ±0.59% RMS: 0.42%	@50mW, 60 min
Side Mode Suppression Ratio	dB	≥ 55	
Input/Output Isolation	dB	30	
Optical Fiber	-	SMF-28e Single Mode Fiber, Φ2mm×1m	
Fiber Connector	-	FC/APC	
<b>Environment and Electrical Parameters</b>			
Control Function		Software	
Remote Control Port		RS232 DB9 female	
Software Version		NBLController -V20230605	
Operation Temperature Range	°C	-5 to +45	
Storage Temperature Range	°C	-10 to +70	
Dimensions	mm	125(W)×150(D)×31.5(H)	Module
Power Supply	-	DC 12V	SASO
Electrical Power Consumption	-	5W	25°C

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

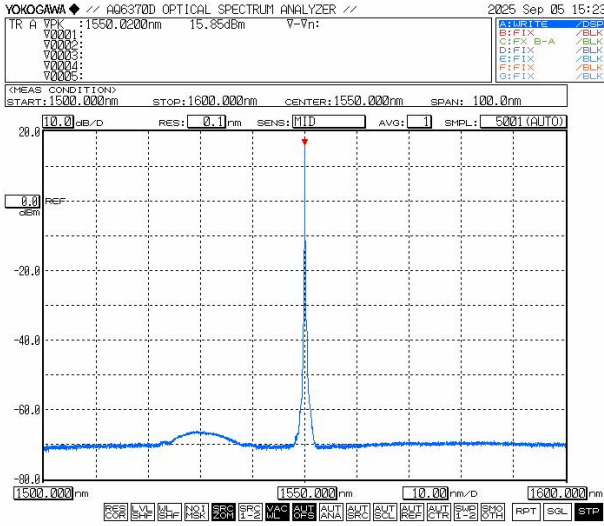
$$\bar{m} = \frac{\sum_{i=1}^n m_i}{n} \quad (4)$$

### 8.3 Power stability of cw lasers

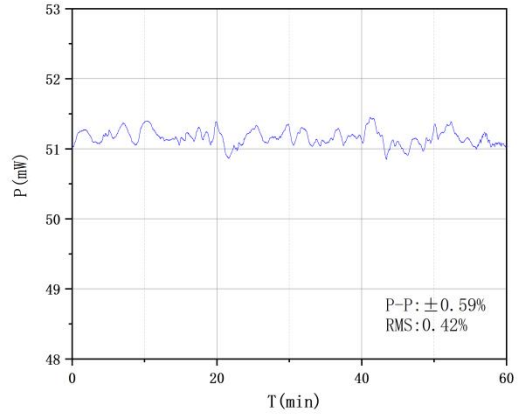
Calculate the mean value of the power,  $\bar{P}$ , and the respective standard deviation,  $s$ , for the appropriate stability time domain (short-term, medium-short-term, medium-term and long-term) according to the specifications given in 7.3.

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

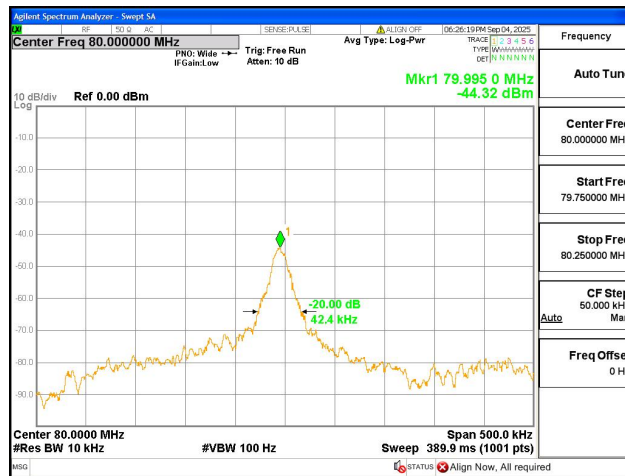
$$\Delta P = \frac{2s}{\bar{P}} \quad (9)$$



Optical Spectrum of 1550.06nm signal  
(28°C, 50mW output power)



Power stability test @ Output power 50mW



Line-width@3dB: 2.12kHz

Wavelength (nm)	Temp (°C)
1549.84	20
1549.96	25
1550.04	28
1550.08	30
1550.26	35

Control table of the wavelength temperature

Passed By: \_\_\_\_\_ Date: 2025-09-08