



Unit 29, Riverside Business Centre, Victoria Street, High Wycombe, HP11 2LT, UK



Certificate of Conformance of ELODIZ THEYA - LED Calibration Light Source for 785nm Raman Systems

Product name	THEYA-LED Calibration Light Source for 785nm
Model Number	ELO-9002
Serial Number	CPV-154
ELODIZ DocID certificate Number	4Ba5Ab2_785_LED_CPV154_Cert

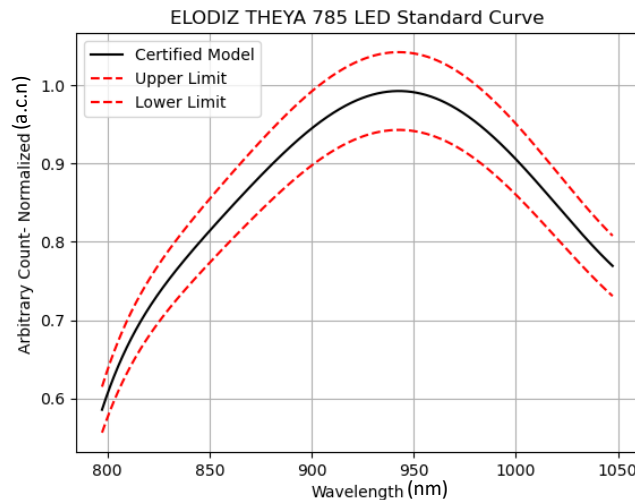
The ELODIZ THEYA-LED Calibration Light Source for relative intensity correction of 785 nm Raman Systems is produced for its use as a reference light source for spectroscopy devices in standard laboratory conditions only. **This reference light source is a secondary calibration standard which is based upon NIST 2241 standard.** The ELODIZ THEYA-LED Calibration Light Source identified above has been evaluated to conform to all applicable tests for this product to match our operational specifications. The data and the results of the test are documented in the completed factory test report and summarized in this conformance certificate; a full copy of the results can be obtained by request to ELODIZ.

This document certifies that the identified product meets applicable factory specifications and accepted international standards for intensity calibration light sources. This certificate is emitted based on the test results obtained in our manufacturing and test protocols.

For the spectral range of applicability of the THEYA-LED intensity calibration source corresponds to the calibration function:

$$Y(x, \text{nm}) = A0 + A1*x + A2*x^2 + A3*x^3 + A4*x^4 + A5*x^5$$

Polynomial Coefficients	Certified Model	Upper Limit (+5% Standard Deviation)	Lower Limit (-5% Standard Deviation)
A0	0.456580666	0.47940969930000005	0.4337516327
A1	0.000789574302	0.0008290530171000001	0.0007500955869
A2	-8.6567801e-07	-9.089619105000001e-07	-8.223941094999999e-07
A3	6.21687555e-10	6.5277193275e-10	5.9060317725e-10
A4	-2.08275588e-13	-2.186893674e-13	-1.978618086e-13
A5	2.41938216e-17	2.5403512680000004e-17	2.298413052e-17



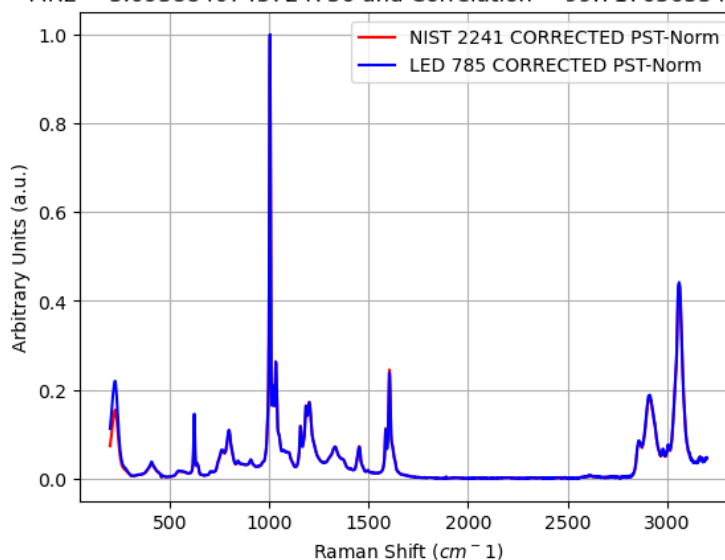
An ELODIZ manufacturing sticker reflecting the conformance is applied to the device, next to the Serial Number assigned to this product. The certification date of this certificate applies for the first validation period. Following recertifications of the unit will require new stickers and certificates.

Range, nm (with respect to the 785 nm line)	797.5nm to 1048.3nm equivalent to 200cm ⁻¹ to 3200cm ⁻¹ at 785nm laser excitation
Temperature, °C	20 to 30
Serial Number	CPV-154
Mean relative error (MRE), % (Polystyrene corrected with NIST 2241 vs ELODIZ THEYA 785 LED)	3.09388
Final Disposition (MRE < 5%)	PASS
Certification Date	04/02/2025
Certification Expiration	2 years from certificate or 250h of use

The table below provides the Relative Errors between Corrected Polystyrene using NIST 2241 and ELODIZ THEYA LED.

S.No	Raman Shift (cm ⁻¹)	Relative Error (%)	PASS/FAIL
1	620.9	4.57	Relative Error < 7% (PASS)
2	795.8	2.61	
3	1001.4	0.05	
4	1031.8	0.14	Relative Error < 5% (PASS)
5	1155.3	1.43	
6	1450.5	2.33	
7	1583.1	2.78	
8	1602.3	2.98	Relative Error < 7% (PASS)
9	2852.4	3.29	
10	2904.7	3.59	
11	3054.3	4.57	

PST CORRECTION (NIST 2241 vs ELODIZ THEYA LED 785)
MRE = 3.0938840743724736 and Correlation = 99.71765653412004



Additional Information:

- 1- The certified values become invalid if the unit is improperly stored or used, damaged, contaminated, or altered in any way.
- 2- Please refer to the User's Guide to correctly use this device.
- 3- Measurement Conditions: The measuring unit is wavelength calibrated as per CHARISMA CWA-1 (17815).

Performed by: Muhammad Faizan

Title: Development Engineer

Signature: Muhammad Faizan

Date: 04/02/2025