



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



## Certificate of Conformance of ELODIZ THEYA - LED Calibration Light Source for 532nm Raman Systems

<b>Product name</b>	<b>THEYA-LED Calibration Light Source for 532nm</b>
<b>Model Number</b>	<b>ELO-9001</b>
<b>Serial Number</b>	<b>ABC123</b>
<b>ELODIZ DocID certificate Number</b>	<b>4Ba5Aa2_532_LED_ABC123_Cert</b>

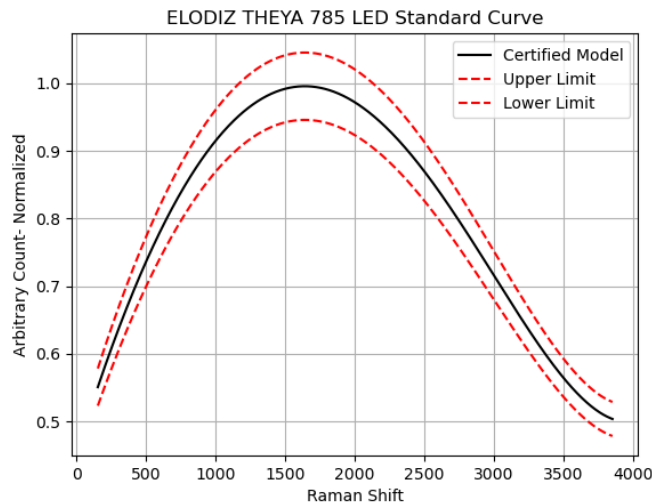
The ELODIZ THEYA-LED Calibration Light Source for Relative Intensity Correction of 532 nm Raman Systems is produced for its use as a reference light source for spectroscopy devices in standard laboratory conditions only. **This reference light source is a secondary calibration standard which is based upon NIST 2242a 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:

$$Y(x, \text{cm}^{-1}) = A0 + A1*x + A2*x^2 + A3*x^3 + A4*x^4 + A5*x^5$$

Polynomial Coefficients	Certified Model	Upper Limit (+5% Standard Deviation)	Lower Limit (-5% Standard Deviation)
<b>A0</b>	<b>4.52834008e-01</b>	0.47547570840000003	0.4301923076
<b>A1</b>	<b>6.76443309e-04</b>	0.0007102654744500001	0.00064262114355
<b>A2</b>	<b>-2.24850975e-07</b>	-2.3609352375000002e-07	-2.1360842624999997e-07
<b>A3</b>	<b>1.68070447e-11</b>	1.7647396935000004e-11	1.5966692465e-11
<b>A4</b>	<b>-8.10964557e-15</b>	-8.515127848500001e-15	-7.7041632915e-15
<b>A5</b>	<b>1.89388548e-18</b>	1.988579754e-18	1.799191206e-18



An ELODIZ manufacturing sticker and the issue of his certificate with a PASS reflects conformance of the device. Each THEYA-LED has an Serial Number assigned to this product and traceable results to the NIST or white light

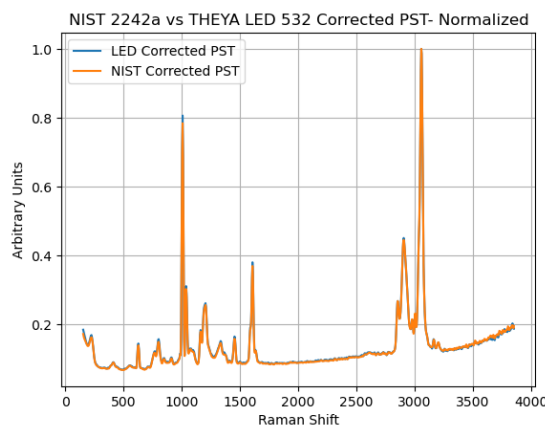
correction are available on demand. The date on the certificate of the device applies for the first validation period. Following recertifications of the unit will require new stickers and certificates.

Please refer to the User's Guide to correctly this device.

<b>Range, cm<sup>-1</sup></b> (with respect to the 785 nm line)	150 to 4000
<b>Temperature, °C</b>	20 to 30
<b>Serial Number,</b>	532 nm – ABC123
<b>Mean relative error (MRE), %</b> (Polystyrene corrected with NIST 2241 vs ELODIZ THEYA 785 LED)	0.01166%
<b>Final Disposition (MRE &lt; 2.5%)</b>	<b>PASS</b>
<b>Certification Date</b>	09/12/2024
<b>Certification Expiration</b>	2 years from manufacturing 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 <sup>-1</sup> )	Relative Error (%)	PASS/FAIL
1	620.9	4.38	Relative Error < 5% (PASS)
2	795.8	4.58	
3	1001.4	2.52	
4	1031.8	2.13	
5	1155.3	3.42	
6	1450.5	4.18	
7	1583.1	3.99	
8	1602.3	2.62	
9	2852.4	1.99	Relative Error < 5% (PASS)
10	2904.7	1.29	
10	3054.3	0.41	



**Additional Information:**

- 1- The certified values become invalid if the unit is improperly stored or used, damaged, contaminated, or altered in any way.
- 2- 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:** 09/12/2024