



Control Development
2633 Foundation Drive
South Bend, IN 46628
Phone: (574) 288-7338
Fax: (574) 288-7339
<http://www.controldevelopment.com>

CALIBRATION CERTIFICATE

Serial Number: SNLC3593

Wavelength Calibration:

Source: BHK AnaLamp® Mercury-Argon Line Source
Model: 81-1057-01 HG
S/N: N/A
Last Cal Date: N/A
Next Cal Date: N/A

Amplitude Calibration:

Source: Gooch & Housego Standard of Spectral Irradiance
Model: OL 220C
S/N: M-1370 Bulb
Last Cal Date: October 30, 2012
Next Cal Date: October 30, 2013

Date of Calibration: November 16, 2012

This certifies that the above product was calibrated to an intrinsic wavelength standard and a NIST traceable irradiance standard in compliance with a quality system registered to ISO 9001:2008.

As Shipped Conditions:

At the completion of this calibration, measured values were IN-SPECIFICATION at the points tested.

Certified by: Adam Nix
Quality Manager
Control Development, Inc

SNLC3593

Line Verify

| Measured | HGAR | Error(nm) | Error(pix) | FWHM(nm) |
|----------|---------|-----------|------------|----------|
| 365.068 | 365.015 | 0.0528 | 0.0330 | 4.0800 |
| 435.738 | 435.840 | -0.1015 | -0.0627 | 3.2993 |
| 546.151 | 546.080 | 0.0710 | 0.0438 | 2.9764 |
| 696.574 | 696.540 | 0.0340 | 0.0218 | 2.7339 |
| 763.471 | 763.510 | -0.0386 | -0.0241 | 2.8322 |
| 826.449 | 826.450 | -0.0008 | -0.0005 | 2.9927 |
| 852.118 | 852.140 | -0.0223 | -0.0142 | 3.4258 |
| 965.794 | 965.780 | 0.0139 | 0.0091 | 4.6696 |