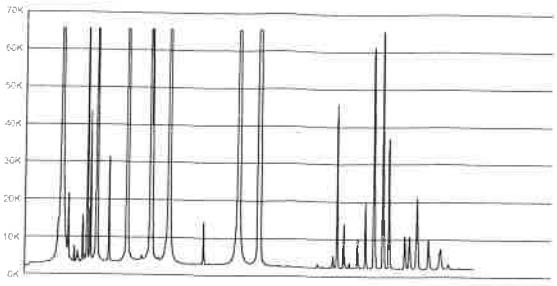
Test Spectrum



Ocean Optics

Wavelength Calibration Data Sheet

Built for:
Order Number:
Model: **FLAME-S-RAD**
Grating: GRATING_#2 - 600 Lines Blazed at 400 nm
Bandwidth: 199 - 889 nm
Options: DET2B-200-850 Detector, L2-CLens, INTSMA-050 Slit,
Serial Number: **FLMS04133**

λ	Pixel #	Predicted λ	Δλ
213.856	62	213.931	-0.075
296.728	281	296.740	-0.012
298.063	284	298.070	-0.007
302.150	295	302.155	-0.005
307.590	310	307.616	-0.026
326.106	360	326.187	-0.081
334.148	381	334.099	0.049
334.557	382	334.502	0.055
340.365	398	340.377	-0.012
346.620	415	346.662	-0.042
361.051	454	361.096	-0.045
427.397	637	427.483	-0.086
431.958	649	431.978	-0.020
437.612	665	437.555	0.057
467.816	750	467.845	-0.029
472.216	763	472.307	-0.091
479.992	784	479.956	0.036
585.249	1089	585.345	-0.096
594.483	1116	594.580	-0.097
602.999	1141	603.063	-0.064
626.649	1211	626.720	-0.071
636.235	1240	636.191	0.044
659.895	1312	659.977	-0.082
667.828	1336	667.875	-0.047
671.704	1348	671.773	-0.069
692.947	1413	692.994	-0.047
696.543	1424	696.440	0.103
703.241	1445	703.277	-0.036
706.722	1455	706.622	0.100
717.394	1489	717.421	-0.027
724.516	1511	724.518	-0.002
738.398	1554	738.295	0.103
743.890	1572	743.879	0.011
748.887	1587	748.841	0.046
760.155	1623	760.056	0.099
763.511	1634	763.455	0.056
785.482	1705	785.560	-0.078
794.818	1735	794.961	-0.143

This is a sample of calibration peaks used as there were more than can be shown on this page

Calibration Coefficients

First Coefficient: 0.3858373761
Second Coefficient: -1.97628e-005
Third Coefficient: -9.47636e-010
Intercept: 189.80809021
Regression Fit: 0.9999997020

Ruby Pena

Stray Light Measurements (AU)

Holmium Oxide (444nm): 1.80
Yellow Dye: 2.44
Blue Dye: 2.73
Molybdate: 1.43
OG550 Filter: 2.45
RG850 Filter: 3.08
FG3 Filter: 1.27

Calibrated By: Luis.Delgado
Calibrated: 24-April-2017

M

Linearity Test

Serial Number **FLMS04133**

Tech: Luis.Delgado

Linearity: **99.81396**

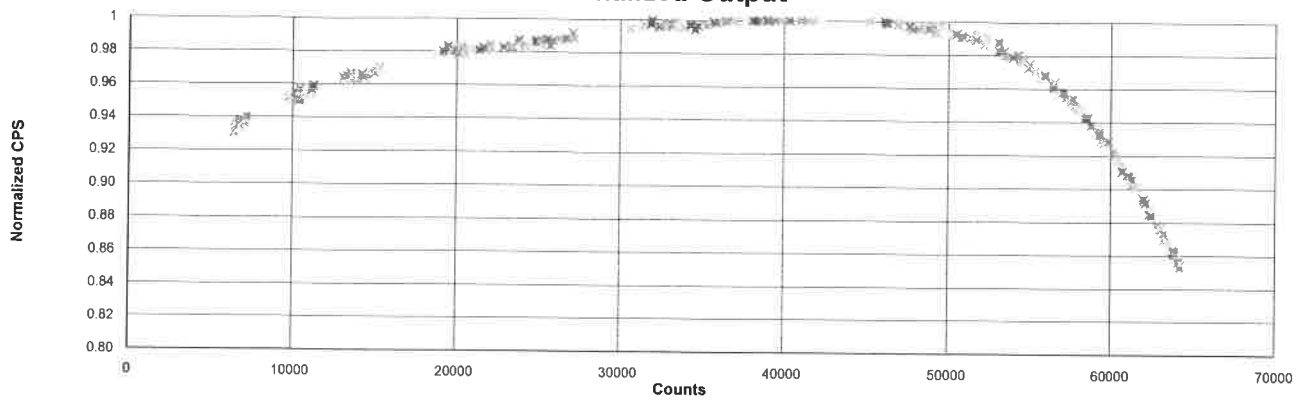
Tested: 4/24/17

Test # 173,830.00

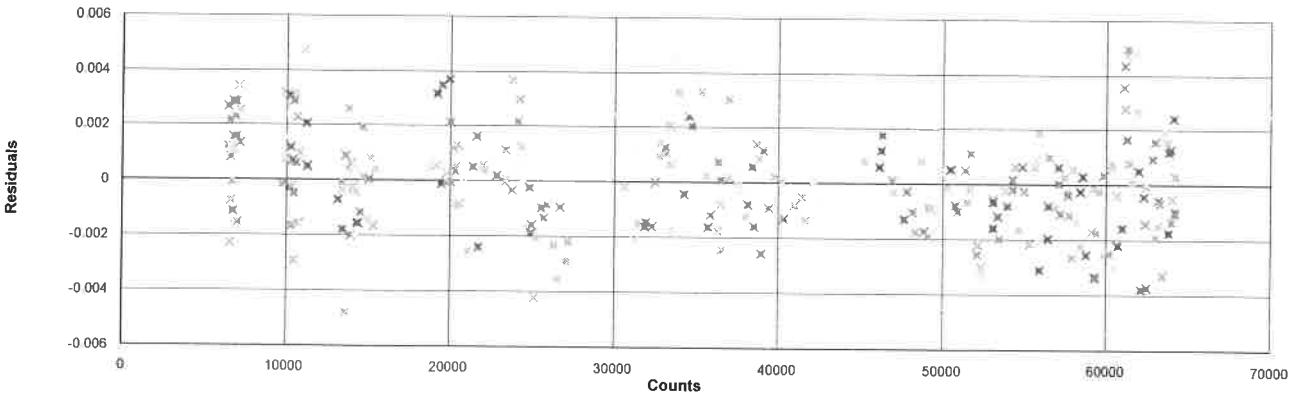
Intercept	0.893344
Coefficient 1	7.20663e-006
Coefficient 2	-1.33919e-010
Coefficient 3	-2.26498e-015
Coefficient 4	8.91163e-020
Coefficient 5	4.24693e-025
Coefficient 6	-2.89509e-029
Coefficient 7	1.55269e-034

Ocean Optics

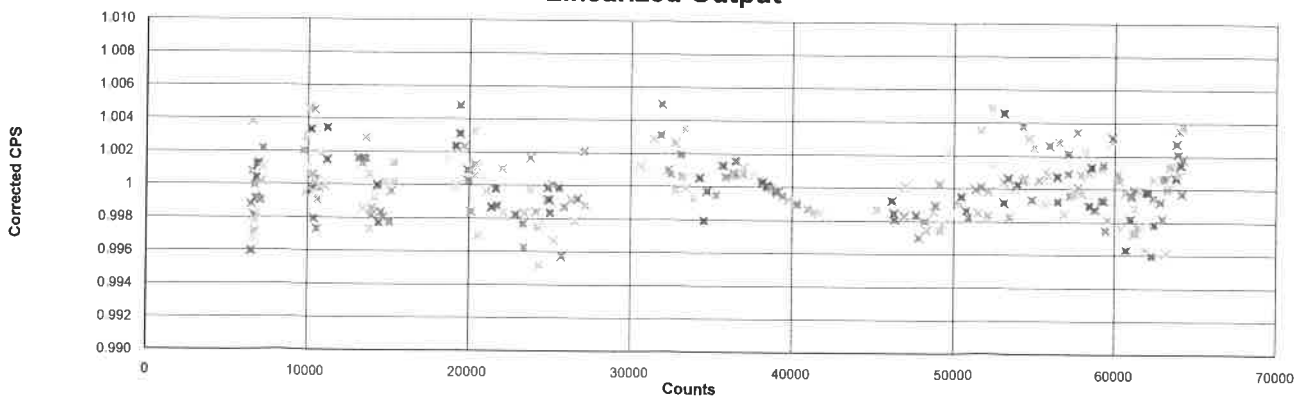
Normalized Output



Residuals



Linearized Output



Max **1.00499500**

Min **0.99516370**

Ocean Optics, Inc.
Calibration Laboratories located in:
Winter Park, Florida, USA
Ostfildern, Germany

Certificate of Radiometric Calibration

Certificate Number: 21929
Date: 4/26/2017

Calibration Performed By:

OOI WINTER PARK
4301 METRIC DRIVE
WINTER PARK, FL 32792

For:

500_NETH_INTERNAL_CUSTOMER
OCEAN OPTICS BV GEOGRAAF 24
DUIVEN, , 6921 EW, NL

Calibrated Equipment Information

Description:	SPECTROMETER, UV- VIS
Model Number:	FLAME-S-RAD
Serial Number:	FLMS04133
Nomenclature:	SPECTROMETER
Temp. [°F] / RH [%]:	72 / 49
Cal. Interval:	12 MONTHS
Cal Date [MM/DD/YYYY]:	4/26/2017
Cal. Due Date:	4/26/2018

Manufacturer:	OCEAN OPTICS INC.
Performed By:	LOUISA MILIC
Signature:	
Calibration Result:	PASS

The calibration values in units [uJoule/counts] are stored on USB provided with this certificate.
As Found and As Left data are the same unless indicated otherwise in Calibration Notes

Calibration Notes

Calibrated Sysytem Configuration: FLAME-S S/N:FLMS04133 with CC-3-DA.
Calibration is voided if CC-3-DA is removed.

Standards Used To Calibrate Equipment

ID	Model Number	Description	Last Cal.	Cal. Due Date
11066045	TH803	TEMPERATURE / HUMIDITY RECORDER	8/25/2016	8/25/2017
12221337	OL 83A	PROGRAMMABLE DC CURRENT SOURCE	9/27/2016	9/27/2017
665	68840	POWER SUPPLY, DEUTERIUM	9/27/2016	9/27/2017
AS012494	953.46317178	CALIPER, VERNIER, 24 INCH	11/13/2015	11/13/2017
CH6902	63345	STANDARD LAMP, DEUTERIUM, CATHODEON R48	2/9/2017	
F-1305	OL FEL-C	STANDARD OF SPECTRAL IRRADIANCE, 1000W C	11/30/2016	

Procedures Used In This Event

Procedure	Title	Revision	Revision Date
MET.009	CAL OF SPECTROMETERS	5	8/2/2013