



1791 Deere Avenue
Irvine, CA 92606
Phone: (949) 863-3144
Fax: (949) 253-1800

38206

CERTIFICATION NUMBER

Certificate of Calibration

Powermeter Probe

Model 818T-10 Serial Number 0241G99

Calibration Wavelength 514 nm

Voltage Responsivity (Rv)	Calibration Factor (1/Rv)	External Load (Rt) 10E10 Ohms
<u>1.29E-3 V/W</u>	<u>7.75E+2 W/V</u>	Uncertainty (+/-) 3%
<u>N/A V/W</u>	<u>N/A W/V</u>	

Customer _____

Date Calibrated	<u>16 Sep 1999</u>	Temperature	<u>18.9 deg C</u>
Calibration Due Date	<u>15 Sep 2000</u>	Humidity	<u>48 %</u>

Calibration Procedure QI-19.70, Revision C

Standards Used:

Asset #	Mfg	Model	NIST #	Cal Date	Due Date
0004T97	HP	3478A	136968	07 Oct 1998	07 Oct 1999
0032T97	MOLECTRON	PM5200	*	16 Oct 1998	15 Oct 1999
0054W97	MOLECTRON	PM10	813343	11 Nov 1998	11 Nov 1999

This document certifies that the probe referenced herein has been calibrated using test equipment and standards traceable to the National Institute of Standards and Technology (NIST), other recognized National standards laboratories using natural physical constants, or ratio calibration techniques.

Remarks:

* Test equipment used in this calibration has been calibrated and certified by an ANSI Z540 compliant calibration lab using standards which are traceable to NIST.

Technician James Nissen
Sign
James Nissen
Print

QA Inspector Vicki Watson
Sign
Vicki Watson
Print

CAL
STICKER

Please remove and apply calibration sticker to the instrument as required.



Newport Corporation
 1791 Deere Avenue, Irvine, CA 92606
 Telephone: 949-863-3144
 Facsimile: 949-253-1800

Detector Calibration Report

Detector Model Number: **818-IR**

Detector Serial Number: **5038**

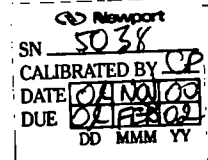
Attenuator Serial Number: **5038**

Operator: **Chau P.**

Calibration Traceable to NIST Number: **844/263553-00**

Calibration Date: **02-NOV-2000**

Calibration Temperature: **23.1 ± 0.5 °C**



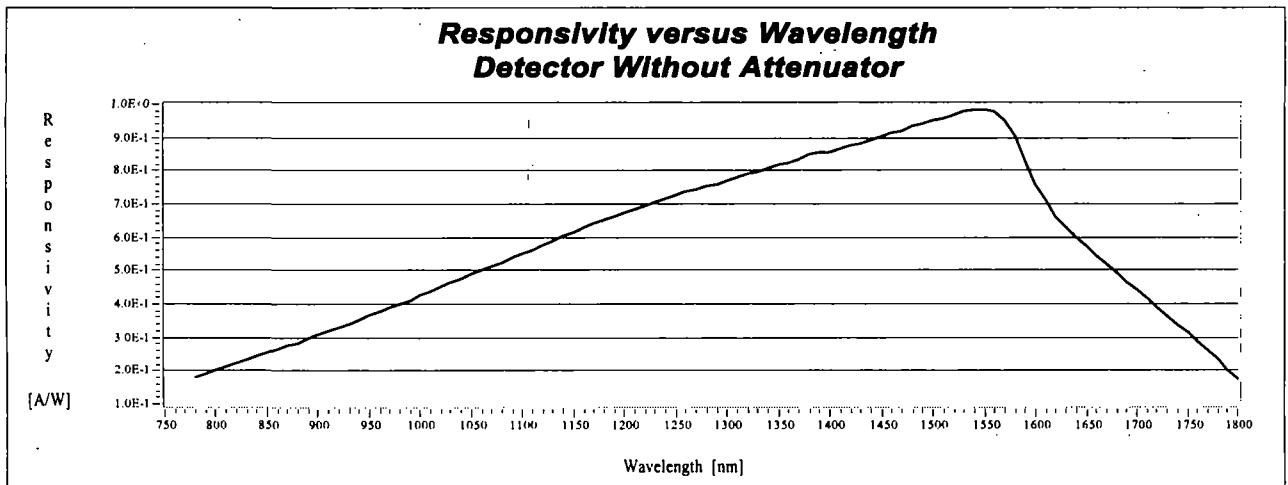
Please remove & apply calibration sticker to the instrument as required.

Complies with **ANSI/NCSL Z540-1-1994**

Table 1. Responsivity [A/W]: Detector Without Attenuator

Lambda	0	10	20	30	40	50	60	70	80	90
700									1.8198E-1	1.9139E-1
800	2.0146E-1	2.1140E-1	2.2160E-1	2.3247E-1	2.4286E-1	2.5379E-1	2.6441E-1	2.7557E-1	2.8458E-1	2.9583E-1
900	3.0739E-1	3.1879E-1	3.3086E-1	3.4243E-1	3.5426E-1	3.6665E-1	3.7835E-1	3.8988E-1	4.0244E-1	4.1325E-1
1000	4.2593E-1	4.3835E-1	4.5146E-1	4.6271E-1	4.7670E-1	4.8875E-1	5.0146E-1	5.1344E-1	5.2585E-1	5.3872E-1
1100	5.5042E-1	5.6259E-1	5.7617E-1	5.8899E-1	6.0257E-1	6.1569E-1	6.2837E-1	6.4074E-1	6.5247E-1	6.6278E-1
1200	6.7433E-1	6.8341E-1	6.9511E-1	7.0430E-1	7.1494E-1	7.2560E-1	7.3560E-1	7.4221E-1	7.5218E-1	7.6156E-1
1300	7.7173E-1	7.8113E-1	7.9028E-1	7.9790E-1	8.0765E-1	8.1701E-1	8.2439E-1	8.3571E-1	8.4832E-1	8.5280E-1
1400	8.5633E-1	8.6653E-1	8.7734E-1	8.8457E-1	8.9478E-1	9.0269E-1	9.1170E-1	9.2197E-1	9.3442E-1	9.4328E-1
1500	9.5325E-1	9.5962E-1	9.6908E-1	9.7850E-1	9.8524E-1	9.8515E-1	9.7590E-1	9.5204E-1	9.0374E-1	8.3414E-1
1600	7.6135E-1	7.0888E-1	6.6374E-1	6.2965E-1	5.9643E-1	5.7079E-1	5.4408E-1	5.1937E-1	4.9119E-1	4.6471E-1
1700	4.4195E-1	4.1473E-1	3.9171E-1	3.6313E-1	3.3730E-1	3.1497E-1	2.8666E-1	2.6006E-1	2.3199E-1	2.0363E-1
1800	1.7523E-1									

**Responsivity versus Wavelength
 Detector Without Attenuator**

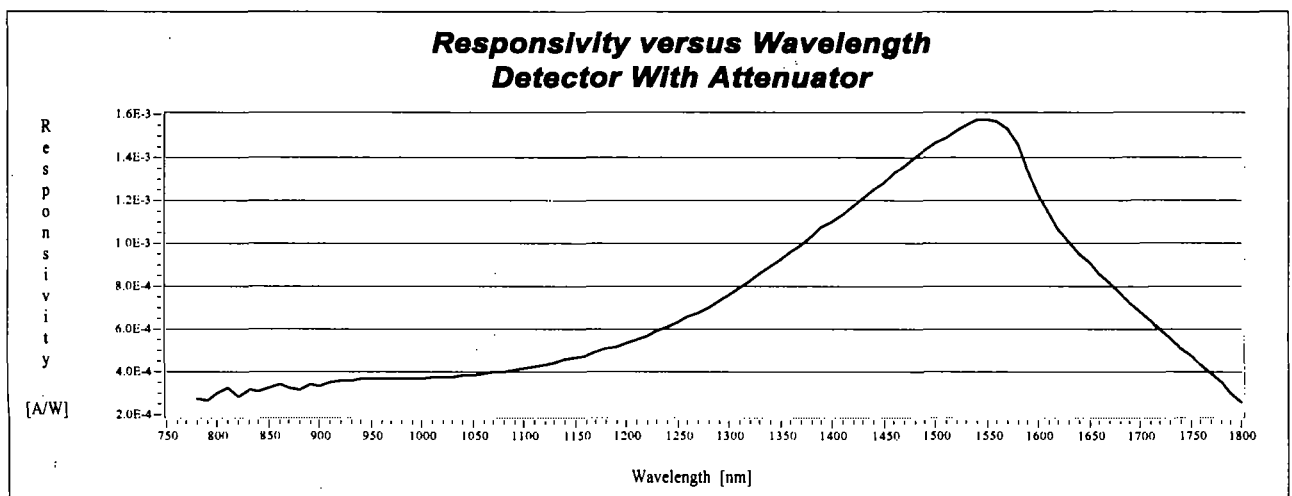


Detector Calibration Report

Detector Model Number: **818-IR**
 Detector Serial Number: **5038**
 Attenuator Serial Number: **5038**

Table 2. Responsivity [A/W]: **Detector With Attenuator**

Lambda	0	10	20	30	40	50	60	70	80	90
700									2.7587E-4	2.6755E-4
800	2.9624E-4	3.2091E-4	2.8364E-4	3.1559E-4	3.1239E-4	3.2434E-4	3.3948E-4	3.2762E-4	3.1296E-4	3.4115E-4
900	3.3685E-4	3.4685E-4	3.5959E-4	3.5713E-4	3.6486E-4	3.6453E-4	3.6292E-4	3.6437E-4	3.6453E-4	3.6387E-4
1000	3.6897E-4	3.7100E-4	3.7513E-4	3.7749E-4	3.8295E-4	3.8724E-4	3.9012E-4	3.9639E-4	4.0228E-4	4.0990E-4
1100	4.1637E-4	4.2353E-4	4.3351E-4	4.4389E-4	4.5492E-4	4.6604E-4	4.7863E-4	4.9202E-4	5.0609E-4	5.1976E-4
1200	5.3672E-4	5.5228E-4	5.7051E-4	5.8795E-4	6.0863E-4	6.3095E-4	6.5444E-4	6.7676E-4	7.0334E-4	7.3234E-4
1300	7.6202E-4	7.9194E-4	8.2412E-4	8.5467E-4	8.8822E-4	9.2355E-4	9.5651E-4	9.9574E-4	1.0373E-3	1.0720E-3
1400	1.0988E-3	1.1358E-3	1.1751E-3	1.2090E-3	1.2500E-3	1.2850E-3	1.3243E-3	1.3615E-3	1.4003E-3	1.4342E-3
1500	1.4702E-3	1.4940E-3	1.5226E-3	1.5502E-3	1.5709E-3	1.5789E-3	1.5705E-3	1.5351E-3	1.4574E-3	1.3446E-3
1600	1.2284E-3	1.1421E-3	1.0655E-3	1.0069E-3	9.4875E-4	9.0747E-4	8.6125E-4	8.1666E-4	7.6978E-4	7.2306E-4
1700	6.8413E-4	6.3987E-4	5.9969E-4	5.5669E-4	5.1192E-4	4.7704E-4	4.2940E-4	3.8931E-4	3.4647E-4	3.0269E-4
1800	2.6184E-4									



Detector Calibration Report

Detector Model Number: **818-IR**
 Detector Serial Number: **5038**
 Attenuator Serial Number: **5038**

Table 3. Calibration Factors: Detector Without Attenuator

Lambda	0	10	20	30	40	50	60	70	80	90
700									5.495E+0	5.225E+0
800	4.964E+0	4.730E+0	4.513E+0	4.302E+0	4.118E+0	3.940E+0	3.782E+0	3.629E+0	3.514E+0	3.380E+0
900	3.253E+0	3.137E+0	3.022E+0	2.920E+0	2.823E+0	2.727E+0	2.643E+0	2.565E+0	2.485E+0	2.420E+0
1000	2.348E+0	2.281E+0	2.215E+0	2.161E+0	2.098E+0	2.046E+0	1.994E+0	1.948E+0	1.902E+0	1.856E+0
1100	1.817E+0	1.777E+0	1.736E+0	1.698E+0	1.660E+0	1.624E+0	1.591E+0	1.561E+0	1.533E+0	1.509E+0
1200	1.483E+0	1.463E+0	1.439E+0	1.420E+0	1.399E+0	1.378E+0	1.359E+0	1.347E+0	1.329E+0	1.313E+0
1300	1.296E+0	1.280E+0	1.265E+0	1.253E+0	1.238E+0	1.224E+0	1.213E+0	1.197E+0	1.179E+0	1.173E+0
1400	1.168E+0	1.154E+0	1.140E+0	1.130E+0	1.118E+0	1.108E+0	1.097E+0	1.085E+0	1.070E+0	1.060E+0
1500	1.049E+0	1.042E+0	1.032E+0	1.022E+0	1.015E+0	1.015E+0	1.025E+0	1.050E+0	1.107E+0	1.199E+0
1600	1.313E+0	1.411E+0	1.507E+0	1.588E+0	1.677E+0	1.752E+0	1.838E+0	1.925E+0	2.036E+0	2.152E+0
1700	2.263E+0	2.411E+0	2.553E+0	2.754E+0	2.965E+0	3.175E+0	3.488E+0	3.845E+0	4.311E+0	4.911E+0
1800	5.707E+0									

Table 4. Calibration Factors: Detector With Attenuator

Lambda	0	10	20	30	40	50	60	70	80	90
700									3.625E+3	3.738E+3
800	3.376E+3	3.116E+3	3.526E+3	3.169E+3	3.201E+3	3.083E+3	2.946E+3	3.052E+3	3.195E+3	2.931E+3
900	2.969E+3	2.883E+3	2.781E+3	2.800E+3	2.741E+3	2.743E+3	2.755E+3	2.744E+3	2.743E+3	2.748E+3
1000	2.710E+3	2.695E+3	2.666E+3	2.649E+3	2.611E+3	2.582E+3	2.563E+3	2.523E+3	2.486E+3	2.440E+3
1100	2.402E+3	2.361E+3	2.307E+3	2.253E+3	2.198E+3	2.146E+3	2.089E+3	2.032E+3	1.976E+3	1.924E+3
1200	1.863E+3	1.811E+3	1.753E+3	1.701E+3	1.643E+3	1.585E+3	1.528E+3	1.478E+3	1.422E+3	1.365E+3
1300	1.312E+3	1.263E+3	1.213E+3	1.170E+3	1.126E+3	1.083E+3	1.045E+3	1.004E+3	9.640E+2	9.328E+2
1400	9.101E+2	8.804E+2	8.510E+2	8.272E+2	8.000E+2	7.782E+2	7.551E+2	7.345E+2	7.141E+2	6.973E+2
1500	6.802E+2	6.693E+2	6.568E+2	6.451E+2	6.366E+2	6.334E+2	6.368E+2	6.514E+2	6.862E+2	7.437E+2
1600	8.141E+2	8.756E+2	9.386E+2	9.932E+2	1.054E+3	1.102E+3	1.161E+3	1.224E+3	1.299E+3	1.383E+3
1700	1.462E+3	1.563E+3	1.668E+3	1.796E+3	1.953E+3	2.096E+3	2.329E+3	2.569E+3	2.886E+3	3.304E+3
1800	3.819E+3									

Wavelength Range	Accuracy Over the Range WITHOUT the Attenuator	Accuracy Over the Range WITH the Attenuator
780 - 1700	± 3 %	± 7 %
1710 - 1800	± 5 %	± 7 %