

# Detector Calibration Report



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

Report Number: **818-SL13-AUG-200816171**  
 Detector Model Number: **818-SL**  
 Detector Serial Number: **16171**  
 Attenuator Serial Number: **16171**  
 Operator: **Chau Pham**  
 Traceability Number: **844/276336-08**  
 Calibration Date: **13-AUG-2008**  
 Calibration Temperature: **23.4 ± 0.5 °C**  
 Customer: **Initial Purchaser**  
 Customer Address:

Procedure: **PTP99162**  
 Humidity: **40**



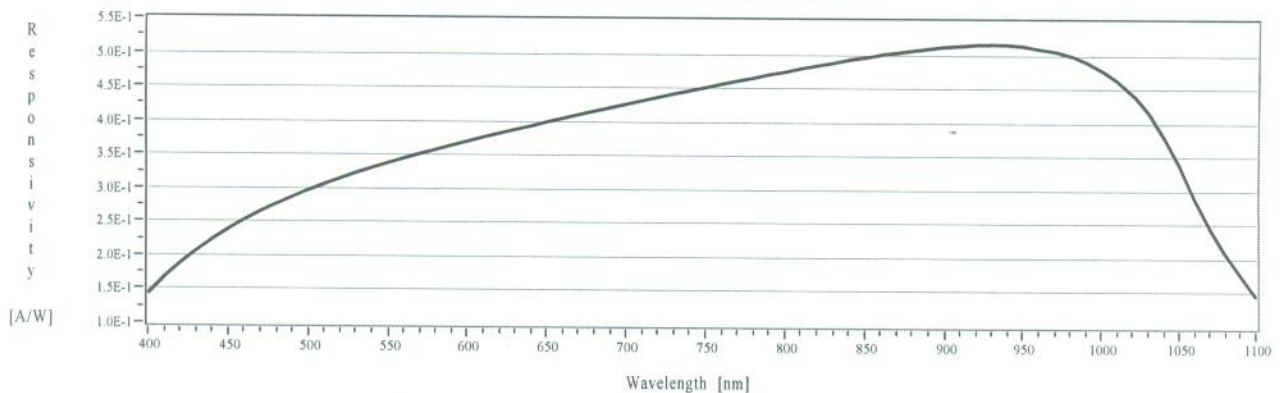
Please remove & apply calibration sticker to the instrument as required.

**Table 1. Responsivity [A/W]:**

**Detector Without Attenuator**

Lambda	0	10	20	30	40	50	60	70	80	90
400	1.4266E-1	1.6639E-1	1.8716E-1	2.0641E-1	2.2313E-1	2.3795E-1	2.5207E-1	2.6439E-1	2.7577E-1	2.8633E-1
500	2.9641E-1	3.0562E-1	3.1433E-1	3.2261E-1	3.3031E-1	3.3768E-1	3.4463E-1	3.5133E-1	3.5767E-1	3.6407E-1
600	3.7033E-1	3.7636E-1	3.8220E-1	3.8788E-1	3.9337E-1	3.9921E-1	4.0451E-1	4.1011E-1	4.1527E-1	4.2077E-1
700	4.2567E-1	4.3107E-1	4.3609E-1	4.4130E-1	4.4629E-1	4.5121E-1	4.5609E-1	4.6089E-1	4.6531E-1	4.7031E-1
800	4.7448E-1	4.7927E-1	4.8383E-1	4.8774E-1	4.9203E-1	4.9553E-1	4.9958E-1	5.0284E-1	5.0617E-1	5.0899E-1
900	5.1152E-1	5.1321E-1	5.1474E-1	5.1526E-1	5.1519E-1	5.1322E-1	5.0891E-1	5.0532E-1	4.9866E-1	4.8932E-1
1000	4.7650E-1	4.6142E-1	4.4111E-1	4.1476E-1	3.7895E-1	3.3711E-1	2.8805E-1	2.4448E-1	2.0743E-1	1.7457E-1
1100	1.4428E-1									

**Responsivity versus Wavelength  
 Detector Without Attenuator**



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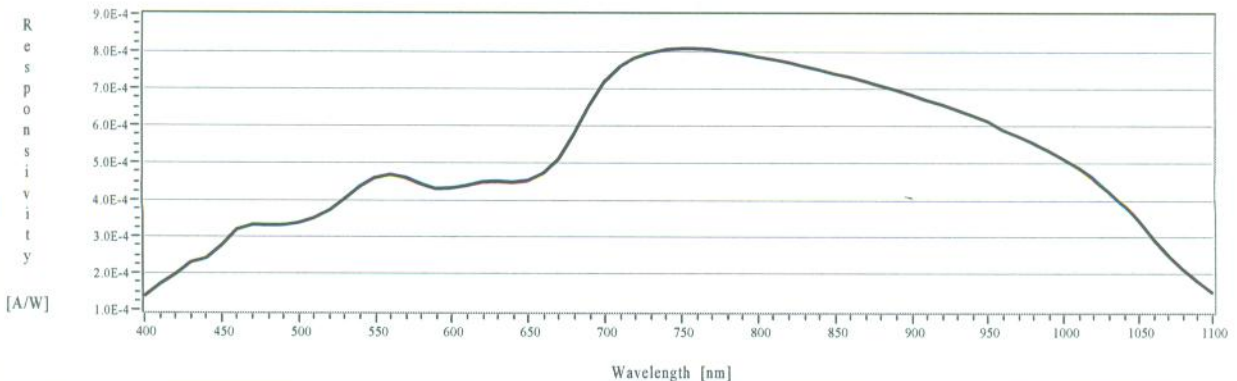
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Newport certifies that the calibration was performed using standards traceable to the National Institute of Standards and Technology (NIST), National Research Council (NRC) using natural physical constants, or ratio techniques. The calibration complies with ANSI/NCSL Z540-1-1994 and ISO 9001. This certificate shall not be reproduced, except in full, without written approval by Newport. The expanded uncertainty claims are based on +/- 2 standard deviations of all known calibration variables. For example, if the calibration uncertainty is claimed to be +/-2%, that means there is a 95% probability the reported responsivity falls within +/- 2% of the NIST reference standard.

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

Lambda	0	10	20	30	40	50	60	70	80	90
400	1.3588E-4	1.6940E-4	1.9579E-4	2.2838E-4	2.4043E-4	2.7559E-4	3.1879E-4	3.3152E-4	3.3074E-4	3.3128E-4
500	3.3732E-4	3.4975E-4	3.7128E-4	4.0210E-4	4.3577E-4	4.5902E-4	4.6748E-4	4.5957E-4	4.4348E-4	4.3111E-4
600	4.3267E-4	4.3978E-4	4.4823E-4	4.5018E-4	4.4748E-4	4.5165E-4	4.7135E-4	5.1042E-4	5.7769E-4	6.5471E-4
700	7.1802E-4	7.5871E-4	7.8337E-4	7.9781E-4	8.0628E-4	8.0854E-4	8.0870E-4	8.0737E-4	8.0074E-4	7.9604E-4
800	7.8731E-4	7.7970E-4	7.7200E-4	7.6163E-4	7.5256E-4	7.4107E-4	7.3174E-4	7.2076E-4	7.0854E-4	6.9720E-4
900	6.8365E-4	6.7013E-4	6.5827E-4	6.4303E-4	6.2836E-4	6.1278E-4	5.8822E-4	5.7220E-4	5.5324E-4	5.3277E-4
1000	5.0989E-4	4.8638E-4	4.5817E-4	4.2574E-4	3.8646E-4	3.4245E-4	2.9188E-4	2.4783E-4	2.1101E-4	1.7794E-4
1100	1.4743E-4									

**Responsivity versus Wavelength**  
**Detector With Attenuator**



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**Table 3. Calibration Factors: Detector Without Attenuator**

Lambda	0	10	20	30	40	50	60	70	80	90
400	7.0096E+0	6.0100E+0	5.3430E+0	4.8446E+0	4.4817E+0	4.2026E+0	3.9671E+0	3.7823E+0	3.6262E+0	3.4925E+0
500	3.3737E+0	3.2720E+0	3.1814E+0	3.0997E+0	3.0275E+0	2.9614E+0	2.9016E+0	2.8463E+0	2.7959E+0	2.7467E+0
600	2.7003E+0	2.6570E+0	2.6165E+0	2.5781E+0	2.5421E+0	2.5049E+0	2.4721E+0	2.4384E+0	2.4081E+0	2.3766E+0
700	2.3493E+0	2.3198E+0	2.2931E+0	2.2660E+0	2.2407E+0	2.2163E+0	2.1925E+0	2.1697E+0	2.1491E+0	2.1263E+0
800	2.1076E+0	2.0865E+0	2.0668E+0	2.0503E+0	2.0324E+0	2.0180E+0	2.0017E+0	1.9887E+0	1.9756E+0	1.9647E+0
900	1.9550E+0	1.9485E+0	1.9427E+0	1.9408E+0	1.9410E+0	1.9485E+0	1.9650E+0	1.9789E+0	2.0054E+0	2.0437E+0
1000	2.0986E+0	2.1672E+0	2.2670E+0	2.4110E+0	2.6389E+0	2.9664E+0	3.4717E+0	4.0904E+0	4.8209E+0	5.7284E+0
1100	6.9311E+0									

**Table 4. Calibration Factors: Detector With Attenuator**

Lambda	0	10	20	30	40	50	60	70	80	90
400	7.3593E+3	5.9033E+3	5.1075E+3	4.3787E+3	4.1592E+3	3.6286E+3	3.1369E+3	3.0164E+3	3.0236E+3	3.0186E+3
500	2.9645E+3	2.8592E+3	2.6934E+3	2.4869E+3	2.2948E+3	2.1785E+3	2.1391E+3	2.1760E+3	2.2549E+3	2.3196E+3
600	2.3113E+3	2.2739E+3	2.2310E+3	2.2213E+3	2.2347E+3	2.2141E+3	2.1216E+3	1.9592E+3	1.7310E+3	1.5274E+3
700	1.3927E+3	1.3180E+3	1.2765E+3	1.2534E+3	1.2403E+3	1.2368E+3	1.2366E+3	1.2386E+3	1.2489E+3	1.2562E+3
800	1.2702E+3	1.2825E+3	1.2953E+3	1.3130E+3	1.3288E+3	1.3494E+3	1.3666E+3	1.3874E+3	1.4113E+3	1.4343E+3
900	1.4627E+3	1.4922E+3	1.5191E+3	1.5551E+3	1.5914E+3	1.6319E+3	1.7000E+3	1.7477E+3	1.8075E+3	1.8770E+3
1000	1.9612E+3	2.0560E+3	2.1826E+3	2.3489E+3	2.5876E+3	2.9201E+3	3.4261E+3	4.0350E+3	4.7391E+3	5.6198E+3
1100	6.7828E+3									

Wavelength Range	Uncertainty Over the Range WITHOUT the Attenuator	Uncertainty Over the Range WITH the Attenuator
400 - 940	± 1 %	± 1 %
941 - 1100	± 4 %	± 4 %

Standards:

Model: **Hamamatsu**

Serial: **D214**

Due Date: **04/10/2010**