

燈具配光曲線試驗報告

測試標準： CIE 70 (1987 年版)

收件日期： 103 年 06 月 18 日

測試日期： 103 年 07 月 17 日 至 103 年 07 月 18 日

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2. 報告編號：14050503
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報告簽署人：



試驗報告

測試樣品基本資料表

委測單位：昶旭能源股份有限公司
委測單位地址：新竹市東區埔頂里公道五路二段 83 號 5 樓之 3
製造廠商：昶旭能源股份有限公司
製造廠商地址：新竹市東區埔頂里公道五路二段 83 號 5 樓之 3
廠牌或商標：CooLED
產品名稱：12W LED 光引擎模組
燈具型號：LE012C-21A
額定輸入電壓 (V)：100~240
額定輸入頻率 (Hz)：50/60
額定輸入功率 (W)：12
測試件外觀尺寸 ϕ xH (mm)：84.7x90

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試驗內容

試驗條件

環境溫度 (°C)	25.0
環境濕度 (% RH)	58.6
γ 軸取樣步距 (°)	2.5
C 軸取樣步距 (°)	2.5

電氣量測

試驗項目	試驗結果
電壓 (V)	110.0
頻率 (Hz)	60
電流 (A)	0.111
功率 (W)	11.9
功率因數	0.979

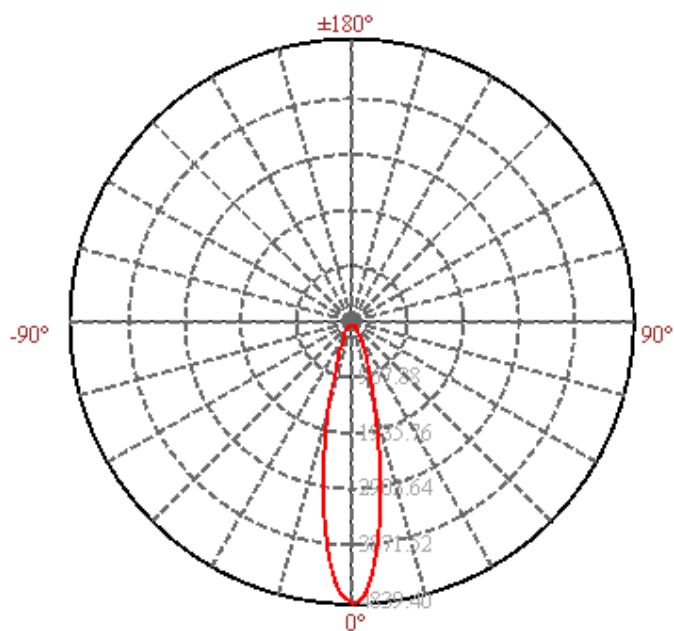
配光量測

試驗項目	試驗結果
燈具全光通量 (lm)	1110.7
燈具發光效率 (lm/W)	93.3
中心光強度 (cd)	4829.1
最大光強度 (cd)	4839.4
最大光強度角度 (°)	C : 340.0 γ : 0.0
半峰邊角(50%Imax)	C0_180 Left=11.4 Right=11.7
	C90_270 Left=11.7 Right=11.4

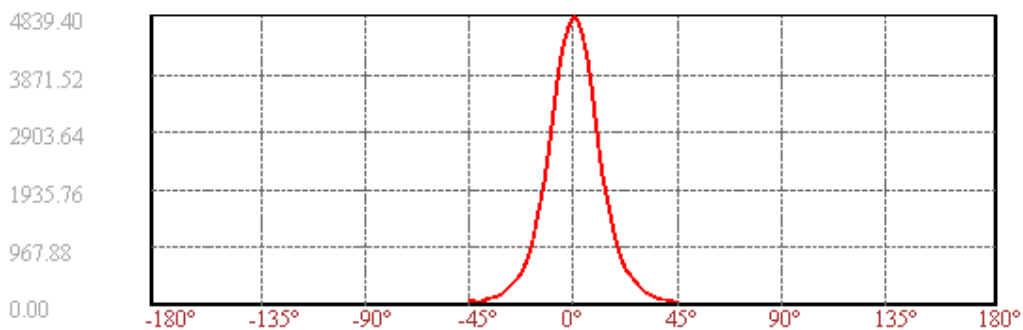
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配光曲線圖(一)

極座標圖 C0 / 180

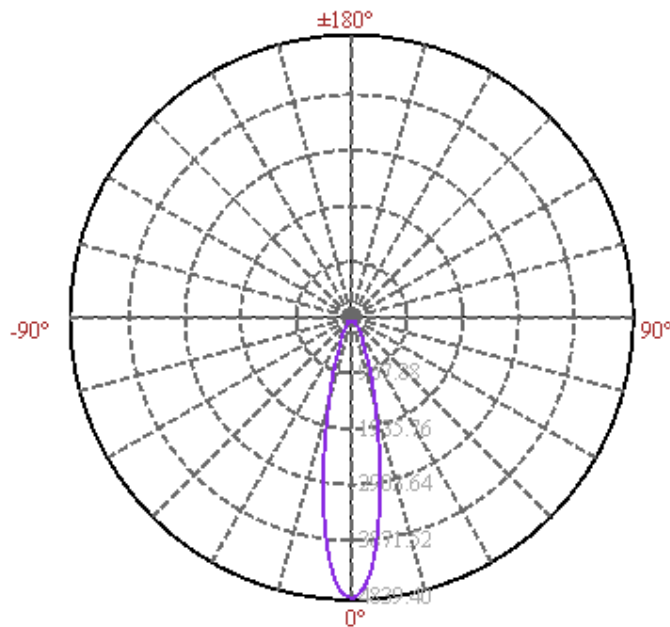


直角座標圖 C0 / 180

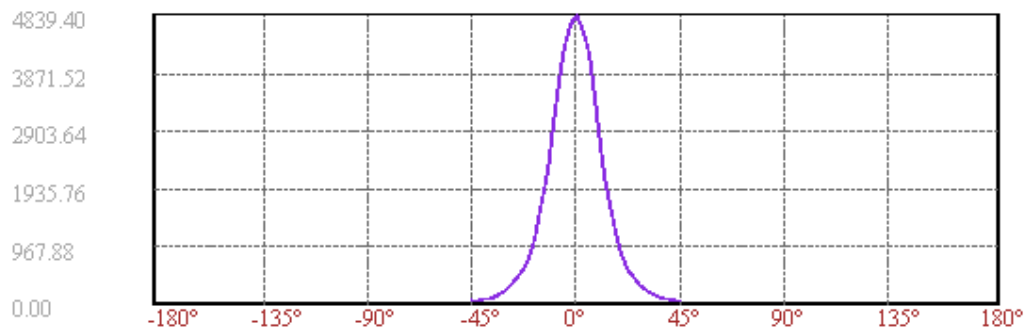


配光曲線圖(二)

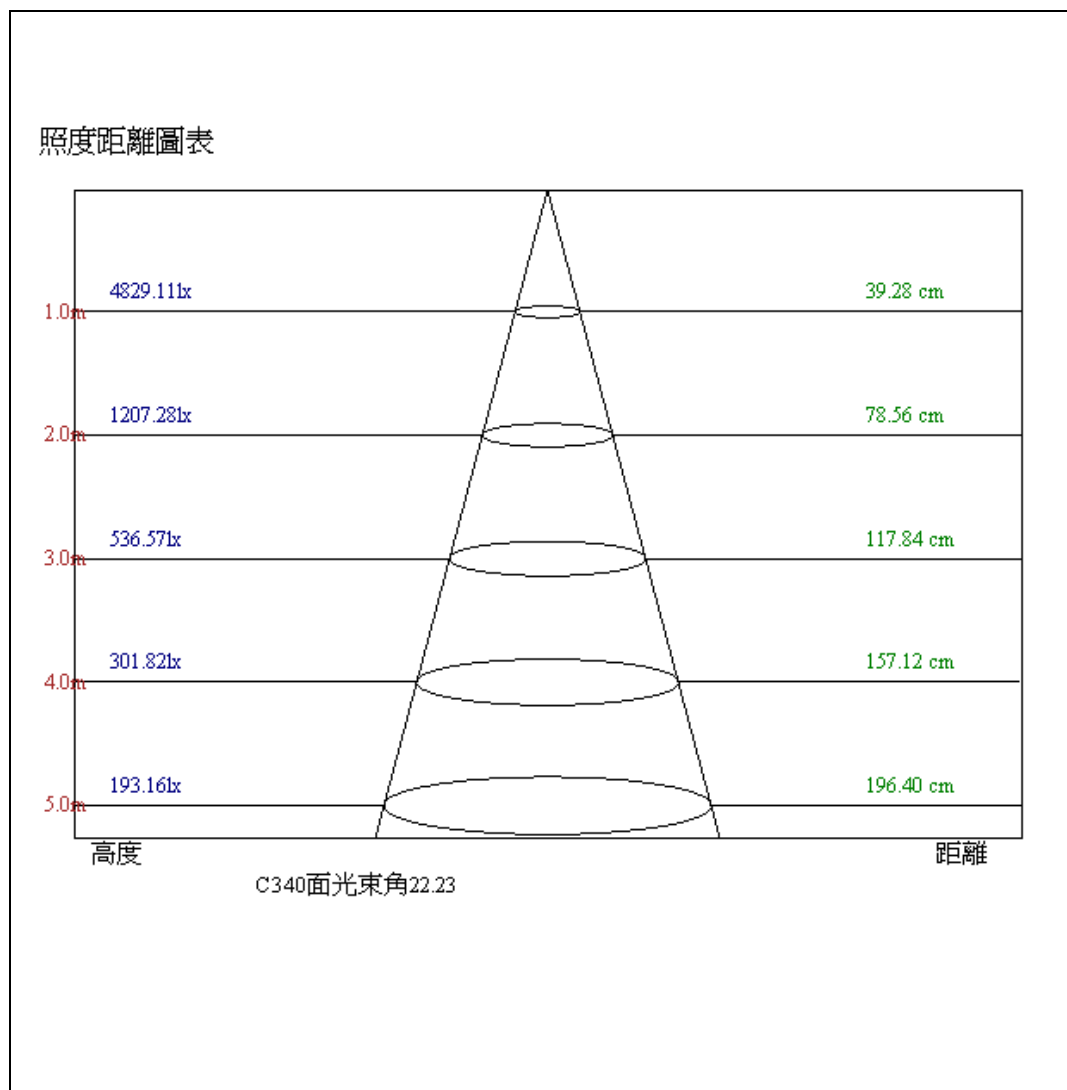
極座標圖 C90 / 270



直角座標圖 C90 / 270



照度距離表



測試樣品照片

測試樣品外觀



測試樣品架設方向



光強數據表(一)

光強數據表(cd)

$\gamma/C(^{\circ})$	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0
0	4829.106	4831.165	4830.479	4828.419	4825.674	4826.36	4825.674	4829.792
2.5	4680.148	4682.894	4676.716	4680.148	4681.521	4675.343	4677.403	4678.089
5	4234.649	4240.14	4244.945	4246.318	4247.691	4250.437	4249.064	4245.632
7.5	3630.582	3631.268	3631.268	3627.149	3623.717	3619.598	3617.539	3614.107
10	2900.209	2900.896	2903.642	2902.269	2896.091	2891.285	2881.675	2875.498
12.5	2184.939	2181.507	2180.134	2181.507	2178.074	2173.956	2168.464	2166.405
15	1582.931	1578.812	1576.753	1576.066	1573.321	1570.575	1564.397	1563.024
17.5	1136.058	1133.999	1128.507	1125.762	1123.702	1122.329	1123.016	1122.329
20	827.1603	825.101	823.0416	818.923	816.8637	814.8044	812.0586	810.6857
22.5	612.3046	610.9316	610.2452	607.4995	604.7537	602.6944	599.9486	598.5757
25	458.542	457.8555	455.7962	455.1097	453.7369	450.9911	448.2454	445.4996
27.5	343.426	341.9844	339.9251	338.6209	337.4539	335.7379	333.8158	333.4726
30	251.9235	251.7176	251.1684	250.3447	249.7269	249.1777	248.7659	247.8735
32.5	183.2795	183.1422	183.3481	183.4168	183.8286	183.8286	183.6227	183.4854
35	134.6795	134.2677	134.0617	134.199	134.8855	135.16	136.327	136.9448
37.5	102.2796	102.966	103.7211	103.5838	103.2406	104.7508	105.5745	105.5745
40	80.03891	81.27451	82.92196	82.9906	83.19654	83.12789	83.12789	82.51009
42.5	67.40842	67.33977	66.9279	67.5457	68.91859	68.23214	67.95757	68.36943
45	55.94487	56.42537	56.97452	57.2491	56.83724	57.45503	57.2491	57.04317

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光強數據表(二)

光強數據表(cd)

第 2 頁 共 10 頁

$\gamma/C(^{\circ})$	40.0	45.0	50.0	55.0	60.0	65.0	70.0	75.0
0	4831.165	4831.852	4834.598	4834.598	4828.419	4822.928	4822.242	4822.242
2.5	4676.716	4674.657	4669.166	4667.106	4662.301	4660.242	4659.555	4658.182
5	4242.886	4240.827	4236.021	4238.081	4236.708	4234.649	4228.471	4221.606
7.5	3606.556	3600.378	3596.946	3592.141	3588.709	3579.099	3573.607	3568.802
10	2871.379	2869.319	2864.514	2852.845	2846.667	2842.548	2834.998	2830.879
12.5	2164.346	2160.913	2156.108	2148.557	2146.498	2141.693	2136.201	2132.769
15	1560.278	1556.846	1554.1	1550.668	1545.177	1541.058	1536.939	1534.193
17.5	1117.524	1113.406	1111.346	1107.914	1105.168	1101.05	1096.931	1094.185
20	809.9993	807.2535	803.8213	801.0756	798.3298	794.2111	790.7789	787.3467
22.5	595.83	593.7707	592.3978	589.652	587.5927	582.7876	580.0419	575.9232
25	443.4403	441.381	440.0081	437.9488	435.203	433.1437	430.3979	428.3386
27.5	333.198	332.0997	330.8641	329.8345	326.7455	323.0387	320.9107	317.8904
30	246.6379	245.6769	244.0294	243.4803	241.9701	239.6362	238.8811	236.1354
32.5	183.4854	182.6617	182.3185	181.0143	179.2982	177.9253	176.3465	174.3558
35	137.4939	137.4253	136.6702	135.9151	135.0228	133.6499	131.8651	129.3253
37.5	105.094	105.0253	104.3389	103.7211	103.0346	102.3482	101.4558	100.7008
40	82.30417	82.16688	81.96095	81.75501	81.20586	81.06857	80.99993	80.794
42.5	68.644	68.09486	68.1635	67.61434	67.68299	66.9279	66.31011	66.37875
45	56.76859	56.69995	56.69995	56.49402	56.21944	56.08215	55.87622	56.28809

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光強數據表(三)

光強數據表(cd)

第 3 頁 共 10 頁

$\gamma/C(^{\circ})$	80.0	85.0	90.0	95.0	100.0	105.0	110.0	115.0
0	4821.555	4826.36	4828.419	4826.36	4821.555	4816.75	4816.75	4817.437
2.5	4652.69	4646.513	4643.081	4642.394	4638.962	4638.962	4639.648	4638.962
5	4211.996	4207.191	4203.759	4199.64	4196.208	4181.793	4174.928	4172.869
7.5	3559.878	3553.7	3548.209	3538.599	3533.793	3521.438	3513.2	3509.082
10	2823.328	2816.464	2804.794	2794.498	2785.574	2781.455	2778.709	2773.218
12.5	2127.278	2119.727	2110.803	2103.939	2096.388	2090.896	2081.973	2076.481
15	1529.388	1521.838	1515.66	1508.795	1506.736	1500.558	1496.439	1491.634
17.5	1089.38	1085.262	1079.084	1076.338	1071.533	1066.041	1061.236	1055.745
20	784.601	780.4823	772.9315	769.4993	766.7535	762.6349	759.8892	755.0841
22.5	572.491	569.7452	566.313	562.8809	558.7622	555.33	553.2707	552.5842
25	424.9064	421.4742	417.3556	413.9233	410.4911	409.8047	407.7454	407.059
27.5	315.076	311.2319	308.7607	307.2506	306.015	304.3675	302.926	301.965
30	233.9388	231.4676	229.2023	227.4862	225.4956	224.4659	222.8185	221.3769
32.5	171.9532	170.0312	168.5897	168.3151	166.9422	166.3244	164.8829	163.2354
35	128.2957	127.1287	126.9228	126.7855	125.5499	125.2753	124.3143	123.4906
37.5	99.6711	99.60246	98.91601	98.16093	97.19991	96.37619	95.75839	95.27788
40	80.45078	80.51942	79.28383	78.66603	77.8423	78.25417	77.8423	77.2245
42.5	67.20248	66.24147	66.10418	66.72197	66.31011	66.24147	65.89825	65.89825
45	55.67029	56.21944	55.46436	55.32707	55.67029	55.39571	55.533	55.67029

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光強數據表(四)

光強數據表(cd)

第4頁 共10頁

$\gamma/C(^{\circ})$	120.0	125.0	130.0	135.0	140.0	145.0	150.0	155.0
0	4815.377	4820.868	4824.987	4830.479	4830.479	4827.046	4826.36	4827.046
2.5	4634.157	4629.352	4628.666	4626.606	4631.411	4634.157	4638.962	4636.216
5	4162.573	4157.768	4159.14	4161.2	4159.14	4154.335	4152.962	4154.335
7.5	3502.904	3496.726	3492.607	3490.548	3488.488	3491.234	3497.412	3504.277
10	2764.294	2760.862	2762.921	2764.294	2765.667	2768.413	2771.845	2774.591
12.5	2074.422	2071.676	2071.676	2080.6	2084.032	2084.719	2084.032	2084.719
15	1488.202	1484.083	1482.711	1484.083	1487.516	1488.202	1488.202	1490.261
17.5	1052.313	1049.567	1048.88	1049.567	1050.253	1051.626	1051.626	1052.313
20	753.7112	750.9654	748.2197	745.4739	745.4739	746.1603	745.4739	746.8468
22.5	549.8385	547.7792	544.347	542.2877	541.6012	540.2283	540.2283	540.2283
25	404.3132	402.9403	401.5674	400.1945	399.5081	397.4488	396.7624	396.0759
27.5	300.9353	299.6311	298.2582	296.1302	295.032	293.9337	293.6591	293.5218
30	220.4159	219.4549	219.3862	218.2193	216.8464	216.0913	216.5032	215.954
32.5	161.9999	161.3821	160.2838	160.2151	159.666	159.5973	158.8422	158.4304
35	122.3923	121.1567	120.4702	119.3719	119.3033	118.7541	118.5482	119.0974
37.5	94.5228	94.72873	94.45415	94.38551	93.28721	93.56178	93.90501	94.04228
40	76.60671	76.46942	76.88129	76.94993	76.94993	77.2245	76.46942	75.50841
42.5	65.89825	65.3491	65.21181	64.86858	65.62367	64.93723	64.31944	64.25079
45	55.32707	55.25842	55.12114	55.67029	55.12114	55.25842	54.84656	54.22877

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光強數據表(五)

光強數據表(cd)

第 5 頁 共 10 頁

$\gamma/C(^{\circ})$	160.0	165.0	170.0	175.0	180.0	185.0	190.0	195.0
0	4823.614	4820.868	4820.868	4819.496	4818.809	4811.945	4809.886	4809.886
2.5	4639.648	4638.275	4637.589	4636.216	4632.784	4634.157	4633.47	4630.725
5	4158.454	4159.827	4155.708	4155.708	4154.335	4157.081	4165.318	4172.869
7.5	3505.649	3509.082	3507.022	3505.649	3511.141	3521.438	3531.048	3542.031
10	2776.65	2781.455	2787.633	2793.811	2800.675	2807.54	2813.718	2822.642
12.5	2084.719	2090.896	2093.642	2099.134	2103.252	2108.744	2114.922	2121.786
15	1492.321	1496.439	1499.185	1502.617	1502.617	1506.736	1510.168	1515.66
17.5	1054.372	1053.685	1057.118	1059.864	1060.55	1061.236	1063.296	1068.787
20	747.5332	747.5332	747.5332	748.9061	751.6519	754.3976	756.457	760.5756
22.5	540.2283	540.2283	539.5419	539.5419	539.5419	540.2283	542.9741	544.347
25	396.7624	397.4488	396.7624	397.4488	396.0759	396.7624	397.4488	398.1352
27.5	294.3455	294.3455	293.7277	294.6201	294.4142	293.3845	292.6294	292.8353
30	215.5422	215.7481	216.4345	216.8464	216.9151	216.5718	216.0913	215.954
32.5	158.1558	157.9499	158.499	158.5677	158.499	158.4304	158.5677	157.7439
35	119.3719	120.0584	119.9897	119.7838	119.2346	118.6168	118.1363	117.7245
37.5	93.35585	92.53212	91.84568	92.05161	91.91432	92.12026	92.39483	91.91432
40	74.54739	74.27281	74.27281	74.34146	74.34146	73.99824	74.89061	75.57705
42.5	63.90757	63.49571	63.22113	62.94656	63.28978	63.56435	62.74062	62.74062
45	54.4347	54.02283	54.16012	54.29741	53.95419	53.95419	53.95419	54.36605

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光強數據表(六)

光強數據表(cd)

第 6 頁 共 10 頁

γ/C°	200.0	205.0	210.0	215.0	220.0	225.0	230.0	235.0
0	4808.513	4805.081	4803.708	4807.14	4808.513	4809.199	4812.631	4813.318
2.5	4630.725	4635.53	4633.47	4636.216	4636.216	4636.903	4637.589	4636.903
5	4183.852	4188.657	4190.03	4192.776	4194.835	4194.149	4198.268	4203.073
7.5	3549.582	3555.76	3561.251	3568.802	3572.234	3575.666	3579.099	3583.904
10	2835.684	2844.608	2850.099	2854.218	2858.336	2860.396	2865.201	2871.379
12.5	2131.396	2140.32	2147.871	2156.795	2161.6	2164.346	2170.523	2174.642
15	1525.956	1532.134	1536.939	1541.058	1546.549	1553.414	1556.846	1562.338
17.5	1072.906	1077.024	1080.457	1084.575	1090.067	1091.44	1096.245	1099.677
20	763.3214	767.44	770.8722	772.2451	775.6772	779.1094	781.1688	783.2281
22.5	547.7792	550.5249	553.9571	557.3893	558.7622	562.1944	566.9995	571.1182
25	398.8217	400.881	402.9403	406.3725	410.4911	413.2369	415.9827	418.7285
27.5	294.2082	295.1006	295.5811	297.6404	300.2489	303.4752	304.9167	306.3582
30	215.2676	216.3659	219.043	219.1117	220.1413	220.6905	222.6812	224.3286
32.5	158.5677	158.9795	158.9109	159.7346	160.1465	160.4211	160.8329	162.1371
35	118.3423	118.2736	118.0677	118.1363	119.2346	120.3329	120.5389	121.4312
37.5	91.15924	91.5711	92.46348	93.21857	93.35585	93.69907	94.11093	95.14059
40	75.50841	75.98891	75.98891	75.57705	75.09654	75.09654	75.57705	75.85162
42.5	63.63299	63.70164	63.01519	63.42706	63.90757	64.31944	64.38808	65.07452
45	54.09148	54.29741	54.16012	54.50334	54.4347	54.4347	54.84656	55.12114

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光強數據表(七)

光強數據表(cd)

第 7 頁 共 10 頁

$\gamma/C(^{\circ})$	240.0	245.0	250.0	255.0	260.0	265.0	270.0	275.0
0	4816.063	4818.123	4819.496	4821.555	4822.242	4816.75	4817.437	4812.631
2.5	4636.216	4636.903	4638.275	4640.335	4641.708	4640.335	4648.572	4653.377
5	4206.504	4207.877	4207.191	4207.191	4209.937	4211.996	4209.25	4209.937
7.5	3585.963	3588.709	3592.827	3596.259	3600.378	3602.438	3601.064	3599.005
10	2878.243	2885.108	2893.345	2900.209	2905.014	2905.701	2905.701	2904.328
12.5	2177.388	2179.447	2186.312	2191.117	2196.608	2200.04	2200.727	2200.727
15	1567.829	1570.575	1573.321	1581.558	1587.049	1588.422	1588.422	1589.795
17.5	1103.109	1107.228	1110.66	1112.719	1116.838	1119.584	1124.389	1129.194
20	788.7197	792.1519	794.2111	795.584	799.0162	801.0756	804.5078	809.9993
22.5	573.1774	575.2368	576.6096	580.0419	582.7876	585.5334	588.9656	592.3978
25	421.4742	423.5335	425.5928	428.3386	431.0844	433.8301	435.8894	438.6352
27.5	309.2412	311.8497	314.3209	317.8217	320.4989	322.6955	323.8624	326.4709
30	226.4566	228.3786	231.4676	233.5956	235.5176	236.8218	239.5676	241.1464
32.5	163.7846	165.5693	167.2168	169.7566	171.9532	172.777	173.6007	174.9049
35	122.1863	123.3533	124.177	125.6185	126.6482	127.5406	128.227	127.8838
37.5	95.75839	96.65076	96.92534	96.8567	96.99397	97.47449	98.02364	98.4355
40	76.53807	77.63637	78.73467	79.14654	79.0779	79.42111	79.42111	78.39146
42.5	65.48638	65.55502	65.21181	65.28045	66.10418	65.69231	65.28045	65.21181
45	55.18978	55.67029	56.35673	56.35673	56.21944	56.08215	55.80758	55.73894

-以下空白-

光強數據表(八)

光強數據表(cd)

第 8 頁 共 10 頁

$\gamma/C(^{\circ})$	280.0	285.0	290.0	295.0	300.0	305.0	310.0	315.0
0	4816.063	4810.572	4812.631	4802.334	4800.962	4806.453	4811.945	4819.496
2.5	4652.69	4656.81	4658.182	4663.674	4660.928	4667.792	4665.047	4667.792
5	4208.564	4207.877	4208.564	4207.877	4206.504	4206.504	4208.564	4210.623
7.5	3594.887	3585.276	3579.785	3579.099	3585.276	3594.887	3601.751	3605.183
10	2902.269	2902.269	2898.836	2899.523	2896.777	2896.091	2897.464	2900.209
12.5	2202.1	2202.1	2202.786	2202.1	2200.04	2199.354	2202.1	2202.786
15	1595.287	1597.346	1601.465	1601.465	1599.405	1596.66	1594.6	1596.66
17.5	1131.253	1132.626	1135.372	1138.118	1138.118	1136.745	1136.745	1136.058
20	811.3722	813.4315	816.8637	817.5501	818.923	820.2959	818.2366	819.6094
22.5	593.7707	596.5164	599.2622	602.6944	602.6944	604.0673	605.4402	604.7537
25	441.381	444.1267	448.2454	448.2454	450.3047	452.364	453.7369	452.364
27.5	329.6285	331.8938	333.5412	335.8065	336.6302	337.7285	338.0717	339.0327
30	242.1761	244.3727	245.9515	247.2557	248.2167	250.0701	251.3057	251.9235
32.5	176.3465	177.582	178.1312	178.8863	179.71	181.4261	182.5244	184.0346
35	128.6389	128.8448	128.8448	129.2567	130.0117	130.355	131.5906	132.7575
37.5	98.02364	97.3372	97.40585	97.74906	98.29821	98.98466	99.12195	99.53381
40	77.97959	77.2245	76.88129	76.53807	77.2245	77.77366	78.73467	79.90163
42.5	65.28045	64.66265	64.86858	64.86858	64.93723	64.86858	64.7313	65.00587
45	55.39571	55.60165	55.32707	55.32707	54.9152	55.12114	55.05249	54.98385

-以下空白-

光強數據表(九)

光強數據表(cd)

第9頁 共10頁

$\gamma/C(^{\circ})$	320.0	325.0	330.0	335.0	340.0	345.0	350.0	355.0
0	4823.614	4829.792	4832.538	4835.284	4839.402	4835.284	4834.598	4835.284
2.5	4668.479	4670.538	4676.03	4673.97	4680.834	4678.775	4676.716	4676.716
5	4216.115	4221.606	4225.725	4228.471	4229.157	4230.53	4230.53	4231.903
7.5	3607.243	3607.243	3607.929	3608.615	3606.556	3608.615	3614.107	3622.344
10	2900.209	2896.777	2895.404	2892.659	2891.285	2890.599	2892.659	2897.464
12.5	2200.727	2201.413	2195.235	2193.176	2193.176	2191.117	2188.371	2186.312
15	1597.346	1591.854	1593.914	1594.6	1597.346	1593.227	1590.482	1587.049
17.5	1136.745	1139.49	1142.236	1144.982	1143.609	1142.236	1140.177	1137.431
20	823.0416	824.4145	826.4738	827.8467	828.5331	829.2195	829.2195	827.8467
22.5	603.3808	605.4402	607.4995	609.5588	610.9316	612.991	614.3638	614.3638
25	453.0504	453.0504	454.4233	456.4827	457.8555	458.542	459.9149	459.2284
27.5	340.4056	340.8861	340.5429	341.5039	342.8768	344.4556	344.5243	344.387
30	252.5413	252.6786	252.5413	252.4727	251.9235	251.9921	252.3354	251.7176
32.5	184.5151	184.4464	184.721	184.1032	183.6914	182.7303	182.8676	182.799
35	133.3067	133.7185	133.7185	133.7185	134.2677	134.8855	134.5423	134.6795
37.5	100.2889	100.7694	101.5931	101.9363	101.5245	101.5245	101.3872	101.7304
40	79.69569	80.51942	80.93128	80.45078	79.83298	79.35247	79.48976	79.62704
42.5	66.10418	65.76096	65.41773	66.31011	66.65333	66.85926	66.9279	66.9279
45	55.25842	55.46436	55.94487	55.87622	55.60165	55.94487	56.28809	56.01351

-以下空白-

光強數據表(十)

光強數據表(cd)

第 10 頁 共 10 頁

$\gamma/C(^{\circ})$	
0	360.0
0	4829.106
2.5	4680.148
5	4234.649
7.5	3630.582
10	2900.209
12.5	2184.939
15	1582.931
17.5	1136.058
20	827.1603
22.5	612.3046
25	458.542
27.5	343.426
30	251.9235
32.5	183.2795
35	134.6795
37.5	102.2796
40	80.03891
42.5	67.40842
45	55.94487

-以下空白-



測試設備列表及人員

項次	儀器 編號	量儀名稱	廠牌 / 型號 / 序號
1	99A-01	角度規	Johnson
2	99E-05	數位電力計	YOKOGAWA WT210 (91K116100)
3	99E-17	AC Power Source	APC AFC-5KW
4	990-01	立式大型分佈光度計	浙大三色 GMS-2000
5	99T-06	溫濕度記錄器	YOKOGAWA - SR16000 (S5K910111)
6	99T-07	溫濕度記錄器	YOKOGAWA - SR16000 (S5K910112)
			測試人員：劉峻廷

- 以下空白 -