

## 燈具配光曲線試驗報告

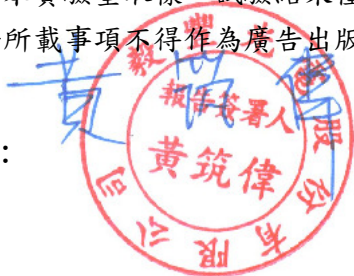
測試標準： CIE 70 (1987 年版)

收件日期： 103 年 05 月 06 日

測試日期： 103 年 05 月 09 日 至 103 年 05 月 12 日

1. 報告發行日期：103 年 07 月 10 日
2. 報告編號：14050501
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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-31A

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  $\phi$  xH (mm) : 84.7x90

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## 試驗內容

### 試驗條件

環境溫度 (°C)	24.1
環境濕度 (% RH)	55.7
$\gamma$ 軸取樣步距 (°)	5
C 軸取樣步距 (°)	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)	0.112
功率 (W)	12.0
功率因數	0.977

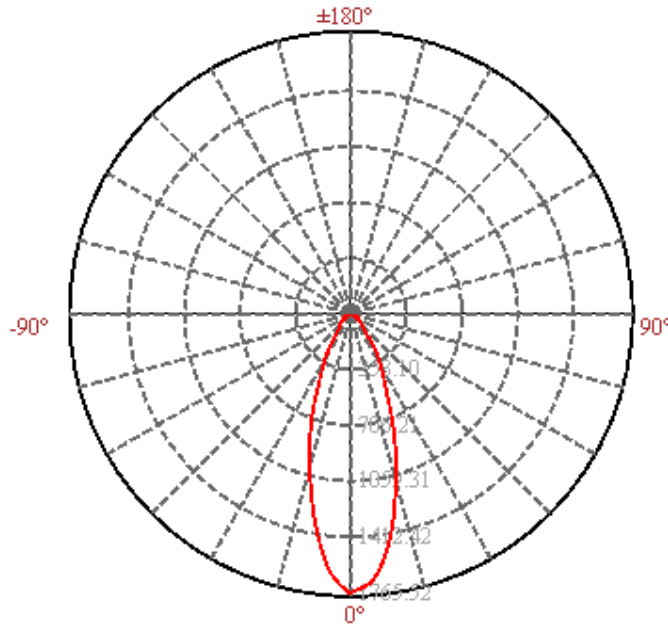
### 配光量測

試驗項目	試驗結果
燈具全光通量 (lm)	1026.7
燈具發光效率 (lm/W)	85.6
中心光強度 (cd)	1742.9
最大光強度 (cd)	1765.5
最大光強度角度 (°)	C : 115.0 $\gamma$ : 0.0
半峰邊角(50%Imax)	C0_180    Left=17.1      Right=18.5
	C90_270    Left=15.8      Right=20.0

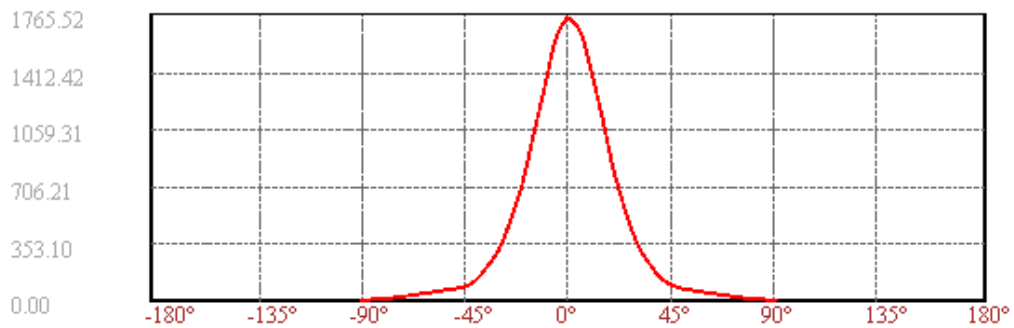
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**配光曲線圖(一)**

極座標圖 C0 / 180

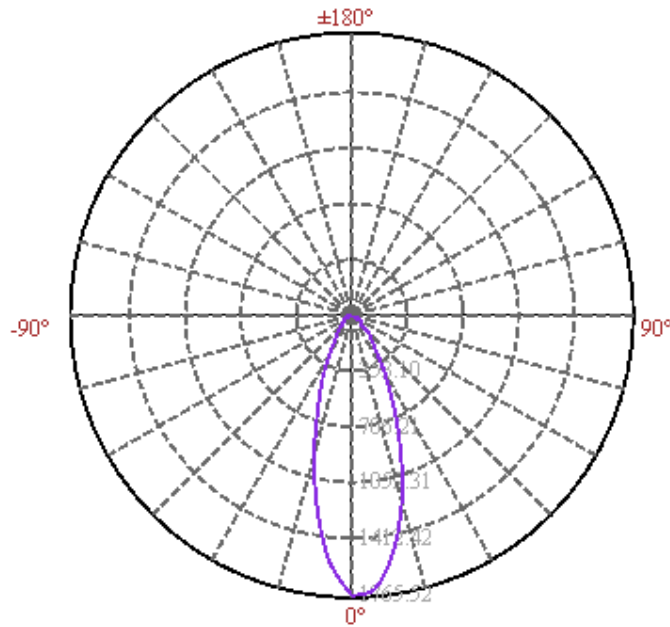


直角座標圖 C0 / 180

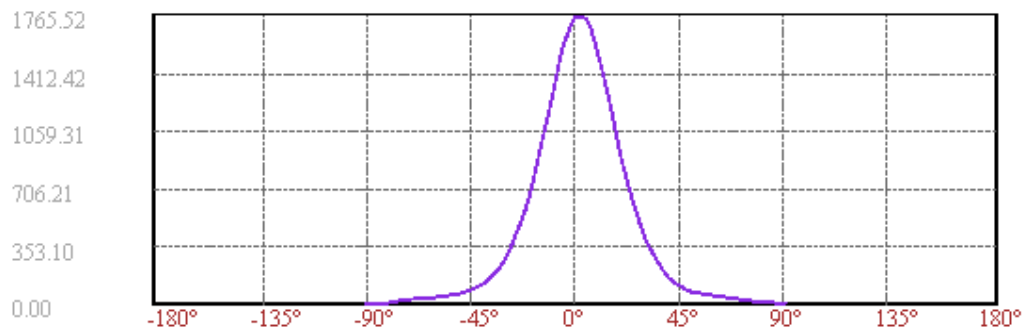


**配光曲線圖(二)**

極座標圖 C90 / 270

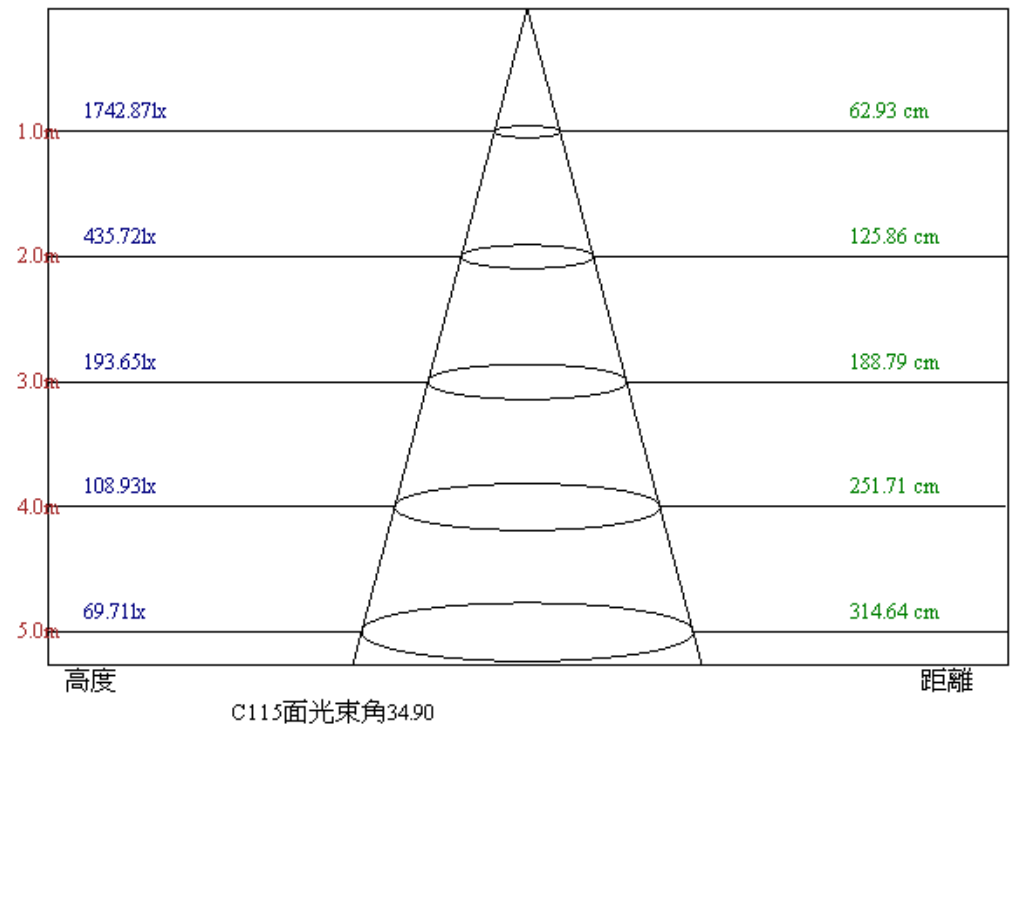


直角座標圖 C90 / 270



### 照度距離表

照度距離圖表

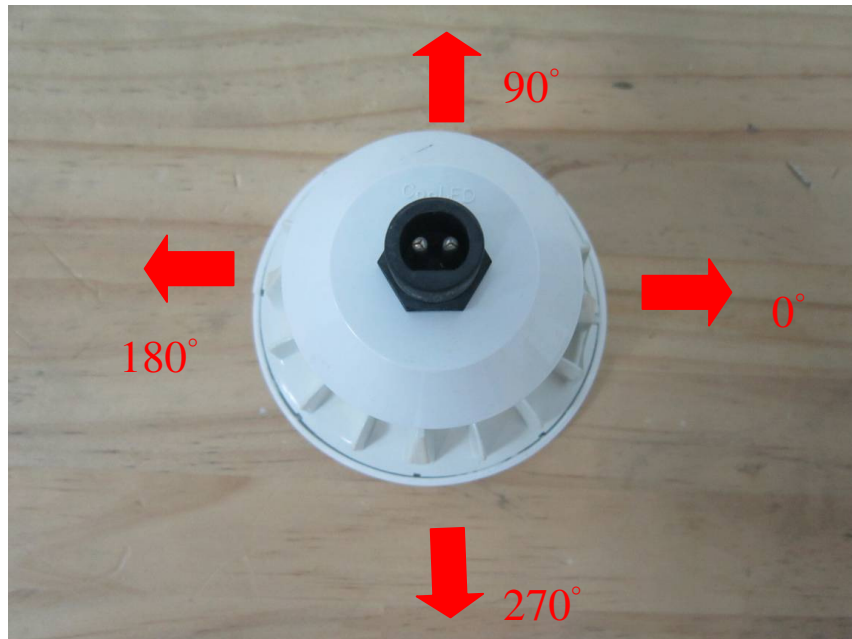


### 測試樣品照片

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	1742.871	1744.931	1746.99	1744.244	1746.303	1747.676	1749.049	1748.363
5	1660.498	1667.363	1676.287	1682.465	1687.27	1694.134	1697.566	1706.49
10	1414.753	1425.736	1436.719	1447.702	1457.999	1468.982	1479.965	1488.888
15	1094.185	1108.601	1122.329	1136.058	1147.041	1158.711	1169.007	1177.245
20	786.6603	797.6433	809.3129	821.6688	833.3383	841.5755	851.1857	858.7366
25	540.2283	549.152	558.0758	566.313	573.1774	580.0419	586.2198	592.3978
30	355.5073	362.1658	368.4124	373.9725	378.4344	382.6903	387.1522	392.4378
35	229.6142	233.321	238.0574	241.421	245.6769	249.7269	252.8845	255.9735
40	146.9668	149.7812	152.1151	154.7236	157.1261	159.7346	161.9312	163.9905
45	98.64144	99.94568	101.3872	102.7601	104.4075	105.6431	106.5355	107.7024
50	75.50841	75.85162	76.60671	77.08722	77.77366	78.11687	78.52874	79.00925
55	61.43639	61.64232	61.98554	62.19147	62.46605	62.74062	62.94656	63.42706
60	49.83555	49.90419	50.31606	50.45335	50.59063	50.65928	50.86521	51.20843
65	39.95081	40.15674	39.95081	40.0881	40.29403	40.36267	40.56861	40.63725
70	30.68387	30.75251	30.8898	30.95845	31.09573	31.16438	31.30167	31.37031
75	22.10337	22.24066	22.24066	22.37795	22.44659	22.58388	22.72117	22.78981
80	14.07202	14.20931	14.3466	14.3466	14.3466	14.41524	14.62117	14.75846
85	6.589825	6.795757	6.8644	6.933044	6.933044	7.001689	7.001689	7.276265
90	0.068644	0.068644	0.068644	0.137288	0.137288	0.137288	0.205932	0.274576

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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	1751.795	1749.736	1751.109	1750.422	1747.676	1750.422	1755.914	1758.659
5	1709.922	1711.295	1714.041	1718.846	1716.1	1720.905	1722.278	1727.083
10	1497.126	1502.617	1506.736	1510.168	1514.973	1517.033	1517.033	1514.287
15	1185.482	1191.66	1199.897	1204.016	1207.448	1209.507	1208.135	1206.762
20	866.9738	871.7789	878.6432	882.7619	887.567	888.2535	888.9399	888.9399
25	597.8893	602.6944	606.813	610.9316	615.0503	617.1096	617.796	616.4232
30	395.9386	399.7827	403.764	406.4412	407.8827	410.0793	409.8047	409.5302
35	258.0328	260.9845	262.8379	264.554	265.9955	267.5743	268.3981	267.437
40	165.0202	166.3244	167.4227	168.2465	169.0702	169.5507	169.8253	170.0312
45	108.6635	109.4185	110.3109	110.9287	111.1346	111.3406	111.4092	111.066
50	79.69569	80.51942	81.06857	81.4118	81.75501	81.61772	81.54908	81.4118
55	63.70164	64.18215	64.52536	64.79994	65.21181	65.41773	65.14316	64.86858
60	51.34571	51.55165	51.68894	51.89487	52.03216	52.23809	52.23809	52.23809
65	40.77454	41.04911	41.32369	41.25505	41.32369	41.59827	41.66691	41.52962
70	31.57624	31.71353	31.78218	31.98811	32.12539	32.19404	32.19404	32.19404
75	23.06438	23.20167	23.47625	23.68218	23.81947	23.88811	23.81947	23.68218
80	14.96439	15.23897	15.51355	15.65083	15.85677	15.85677	15.71948	15.65083
85	7.482197	7.688128	7.894061	8.099993	8.168637	8.237281	8.168637	8.031348
90	0.274576	0.274576	0.4118641	0.480508	0.549152	0.6864401	0.6864401	0.6177961

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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	1758.659	1756.6	1756.6	1759.346	1760.032	1761.405	1761.405	1765.524
5	1725.71	1720.905	1718.846	1720.905	1714.041	1714.041	1707.176	1701.685
10	1512.914	1510.168	1508.109	1503.304	1495.753	1491.634	1482.711	1469.668
15	1206.762	1204.702	1199.897	1192.346	1185.482	1178.618	1169.007	1155.965
20	886.8806	883.4483	877.9568	873.1517	869.0331	862.1688	852.5585	843.6348
25	615.0503	611.6181	608.1859	603.3808	599.2622	595.1435	588.9656	582.1012
30	408.5005	406.9903	404.5191	401.4988	397.5861	394.8403	391.0649	386.1225
35	266.3387	265.3777	263.8676	261.9455	259.1998	256.5913	253.365	250.2074
40	169.7566	169.3448	167.9032	166.4617	164.8829	162.8236	161.1075	159.1855
45	110.7228	109.9677	109.4872	108.8008	108.183	106.8787	105.9177	105.2999
50	80.93128	80.51942	80.10756	79.90163	79.5584	79.21519	78.87196	78.52874
55	64.59401	64.38808	64.1135	64.04486	63.90757	63.70164	63.49571	63.35842
60	52.23809	52.1008	52.03216	52.1008	51.96351	51.82622	51.75758	51.48301
65	41.52962	41.73556	41.87284	41.8042	41.59827	41.52962	41.39233	41.1864
70	32.26268	32.19404	32.26268	32.26268	32.19404	32.05675	32.12539	32.12539
75	23.61354	23.54489	23.47625	23.54489	23.61354	23.54489	23.61354	23.68218
80	15.4449	15.4449	15.37626	15.37626	15.37626	15.4449	15.51355	15.58219
85	7.894061	7.825417	7.688128	7.688128	7.688128	7.756773	7.894061	7.962705
90	0.6864401	0.6177961	0.6177961	0.549152	0.480508	0.4118641	0.4118641	0.3432201

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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	1764.838	1762.778	1761.405	1760.032	1759.346	1757.973	1760.032	1762.092
5	1698.253	1691.388	1683.838	1676.973	1671.482	1663.244	1654.321	1647.456
10	1460.745	1452.507	1440.838	1429.855	1419.558	1407.202	1394.16	1383.177
15	1145.668	1133.999	1123.016	1112.033	1098.304	1086.635	1072.906	1057.804
20	834.7111	824.4145	813.4315	803.1348	791.4654	779.796	768.8129	758.5163
25	575.2368	569.0588	559.4487	551.2114	542.2877	534.0504	525.813	518.9487
30	380.9742	375.7573	369.5107	364.5683	359.6259	353.8599	348.437	342.3963
35	247.3244	244.304	240.5972	236.6159	232.7718	229.271	225.6329	221.2396
40	157.1261	155.1355	153.3507	150.9482	148.7516	146.5549	143.9465	141.6812
45	104.2702	103.1719	101.9363	100.9067	99.6711	98.36686	97.13126	96.03297
50	78.11687	77.49908	76.88129	76.40078	75.85162	75.23383	74.61604	74.27281
55	63.01519	62.80927	62.32876	62.05418	61.84825	61.43639	61.23045	61.02452
60	51.48301	51.13979	50.93385	50.79657	50.65928	50.59063	50.52199	50.31606
65	41.04911	41.04911	40.98047	40.7059	40.63725	40.56861	40.49997	40.49997
70	31.98811	31.78218	31.5076	31.43896	31.23302	31.23302	31.16438	31.02709
75	23.61354	23.40761	23.13303	22.9271	22.65252	22.44659	22.24066	22.17201
80	15.65083	15.4449	15.03304	14.68982	14.41524	14.14067	13.93473	13.79745
85	7.894061	7.619484	7.482197	7.207621	7.001689	6.727113	6.452537	6.315248
90	0.274576	0.205932	0.274576	0.137288	0.137288	0.137288	0.068644	0.068644

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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	1760.719	1760.719	1758.659	1757.973	1759.346	1757.973	1755.227	1754.541
5	1637.846	1630.982	1624.117	1617.939	1609.702	1600.778	1593.914	1586.363
10	1370.134	1358.465	1346.109	1333.753	1323.456	1315.906	1302.177	1293.939
15	1045.448	1034.465	1022.796	1010.44	999.4567	987.1008	976.8042	967.1941
20	746.8468	739.9824	729.6858	718.0163	708.4061	700.1688	689.8723	680.9485
25	511.3979	503.1606	496.2962	488.0589	481.881	473.6436	466.7792	459.9149
30	337.6599	331.5506	326.7455	321.3226	316.7921	312.3989	307.5251	302.7201
35	217.3269	213.4828	210.1193	207.099	203.7354	201.0583	198.038	194.8803
40	139.5533	137.5626	135.16	133.0321	130.9728	129.4626	127.6092	126.0304
45	94.72873	93.76772	92.87534	91.84568	91.22788	90.33552	89.64908	88.82535
50	73.38044	72.96857	72.62536	72.55672	72.28214	71.73299	71.25248	71.04655
55	61.09317	60.95588	60.74995	60.6813	60.6813	60.47537	60.20079	59.92622
60	50.59063	50.52199	50.52199	50.31606	50.04148	49.83555	49.7669	49.62962
65	40.43132	40.22539	40.15674	40.01945	40.01945	39.81352	39.60759	39.53895
70	30.82116	30.75251	30.61523	30.47794	30.34065	30.13472	29.99743	29.72285
75	22.17201	22.10337	22.03473	21.96608	21.89744	21.62286	21.34829	21.14235
80	13.79745	13.7288	13.66016	13.66016	13.52287	13.17965	12.97372	12.69914
85	6.17796	6.109316	6.109316	5.972029	5.697453	5.560164	5.354232	5.079657
90	0.137288	0.068644	0.068644	0.068644	0.068644	0.068644	0.068644	0.137288

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### 光強數據表(六)

光強數據表(cd)

第 6 頁 共 10 頁

$\gamma/C(^{\circ})$	200.0	205.0	210.0	215.0	220.0	225.0	230.0	235.0
0	1754.541	1752.481	1751.109	1751.109	1751.109	1751.109	1751.109	1753.168
5	1582.931	1576.066	1571.948	1569.202	1564.397	1561.651	1559.592	1554.1
10	1287.075	1277.465	1270.6	1263.05	1258.245	1252.753	1250.694	1246.575
15	959.6432	950.033	943.8551	938.3635	930.8127	925.3212	922.5754	917.7704
20	673.3977	664.474	659.6689	655.5502	649.3723	645.9401	643.8808	641.135
25	454.4233	448.9318	443.4403	440.0081	436.5759	433.1437	429.7115	427.6522
30	298.6014	295.1692	291.8743	289.0599	286.2455	283.9803	282.3328	280.6853
35	192.4091	190.2125	187.6041	185.7507	183.76	182.4558	181.4261	180.3965
40	124.4516	123.4906	122.255	121.1567	120.4016	119.7151	118.8228	118.205
45	88.41348	87.79568	87.58975	87.31518	87.0406	86.76602	86.35416	85.9423
50	70.90926	70.77197	70.97791	70.84061	70.84061	70.70332	70.63468	70.4974
55	59.85757	59.78893	59.85757	59.72028	59.78893	59.78893	60.0635	60.26944
60	49.49233	49.35504	49.21775	49.21775	49.35504	49.42368	49.56097	49.42368
65	39.33302	39.33302	39.26437	39.19573	39.12708	38.9898	38.9898	38.85251
70	29.51692	29.51692	29.37964	29.31099	29.31099	29.31099	29.1737	29.1737
75	20.86778	20.5932	20.52456	20.38727	20.45591	20.38727	20.38727	20.52456
80	12.42457	12.14999	11.94406	11.87541	11.94406	11.87541	11.94406	12.0127
85	4.736436	4.530504	4.324573	4.255929	4.187284	4.187284	4.11864	4.11864
90	0.068644	0.068644	0.068644	0.068644	0.068644	0.068644	0.068644	0.068644

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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	1751.109	1749.049	1754.541	1754.541	1750.422	1752.481	1751.795	1751.795
5	1556.846	1554.787	1552.041	1552.728	1554.787	1555.473	1560.965	1567.829
10	1245.202	1243.829	1243.829	1245.889	1245.889	1245.889	1250.694	1254.126
15	917.0839	914.3382	915.0245	914.3382	915.7111	918.4568	921.2026	925.3212
20	639.0757	636.33	636.33	634.9571	634.2706	634.2706	636.33	639.7621
25	426.2793	425.5928	423.5335	423.5335	423.5335	423.5335	423.5335	424.9064
30	279.587	278.8319	277.5963	276.7726	276.8413	276.6353	276.498	277.1158
35	179.3668	178.6804	178.1312	177.9253	177.7193	177.6507	177.582	178.1312
40	117.999	117.4499	117.038	116.9007	116.9007	116.8321	116.9694	117.1753
45	85.53043	85.46178	85.18721	85.11857	85.04992	84.98128	84.98128	84.91264
50	70.29146	70.42875	70.08553	69.81095	69.60503	69.46774	69.60503	69.53638
55	60.20079	59.99486	59.51435	59.10249	58.82791	58.69063	58.62198	58.62198
60	49.21775	49.01182	48.80589	48.59996	48.53131	48.59996	48.53131	48.39402
65	38.64658	38.64658	38.57793	38.57793	38.57793	38.57793	38.50929	38.50929
70	29.10506	29.03642	28.89913	28.83048	28.83048	28.83048	28.89913	28.96777
75	20.52456	20.31863	20.11269	19.97541	19.90676	19.83812	19.76947	19.90676
80	11.94406	11.80677	11.60084	11.46355	11.32626	11.18897	11.18897	11.39491
85	3.981352	3.981352	3.912709	3.77542	3.706776	3.638132	3.569488	3.706776
90	0.068644	0.068644	0.068644	0.068644	0.068644	0.068644	0.068644	0.068644

-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	1753.854	1753.168	1752.481	1753.168	1752.481	1753.168	1754.541	1753.854
5	1566.456	1572.634	1574.693	1579.499	1589.795	1592.541	1598.032	1603.524
10	1260.304	1265.109	1272.66	1276.779	1287.075	1295.999	1304.236	1314.533
15	930.1263	933.5585	939.05	945.9144	953.4653	961.7025	971.3127	976.8042
20	643.1943	645.9401	650.7452	656.2367	661.0418	667.2197	675.457	683.6943
25	428.3386	429.025	433.1437	437.2623	442.0674	448.2454	453.0504	458.542
30	278.9006	279.6557	281.0286	283.7743	287.2752	290.9133	295.032	299.4938
35	178.8176	180.0532	181.0143	183.3481	184.927	187.3981	189.8693	193.0956
40	117.7245	118.3423	118.8914	119.7838	120.9507	122.255	124.2457	125.9618
45	85.04992	85.3245	85.53043	85.9423	86.49145	87.0406	87.93297	88.61941
50	69.74231	69.60503	69.60503	69.8796	70.22282	70.4974	70.63468	70.97791
55	58.48469	58.69063	58.82791	59.03385	59.30842	59.44571	59.30842	59.10249
60	48.53131	48.59996	48.87453	49.08047	49.14911	49.01182	48.87453	48.73725
65	38.44064	38.50929	38.57793	38.57793	38.50929	38.78386	38.78386	38.85251
70	29.03642	29.10506	29.10506	29.1737	29.24235	29.31099	29.31099	29.37964
75	19.90676	20.04405	20.31863	20.45591	20.52456	20.52456	20.38727	20.45591
80	11.46355	11.60084	11.80677	12.0127	12.21863	12.21863	12.21863	12.21863
85	3.77542	3.981352	4.187284	4.255929	4.393216	4.530504	4.667792	4.667792
90	0.068644	0.068644	0.137288	0.068644	0.068644	0.068644	0.068644	0.068644

-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	1753.854	1751.109	1751.795	1750.422	1752.481	1754.541	1755.227	1755.227
5	1609.016	1619.999	1626.863	1630.295	1638.532	1637.846	1645.397	1652.261
10	1322.084	1333.753	1343.363	1354.346	1366.702	1379.058	1390.728	1405.143
15	989.8466	1000.143	1012.499	1026.228	1037.897	1053.685	1066.728	1081.143
20	694.6773	703.6011	713.8976	726.2535	737.2366	750.2791	761.9485	775.6772
25	465.4063	472.2708	480.508	490.1182	499.0419	509.3385	518.9487	529.9318
30	304.2302	310.3396	316.1057	321.7345	328.0497	334.5709	341.9158	348.5742
35	195.91	199.6854	203.7354	207.854	211.9727	216.2286	221.171	225.4269
40	127.9524	129.8058	132.3456	134.8168	136.9448	139.4846	142.0244	144.4956
45	89.78635	90.67873	91.5711	92.66941	94.04228	95.27788	96.44482	97.54314
50	71.38977	71.66434	71.87028	72.48807	72.89993	73.58637	74.27281	74.89061
55	59.37706	59.51435	59.72028	59.78893	60.0635	60.26944	60.6813	61.09317
60	48.80589	49.01182	49.14911	49.2864	49.2864	49.49233	49.49233	49.62962
65	38.92115	38.9898	39.26437	39.33302	39.33302	39.40166	39.74488	39.88217
70	29.44828	29.65421	29.7915	29.99743	30.20336	30.34065	30.47794	30.61523
75	20.5932	20.66185	20.79914	20.93642	21.27964	21.48557	21.69151	21.96608
80	12.28728	12.35592	12.49321	12.69914	12.97372	13.24829	13.59151	13.86609
85	4.80508	4.873724	4.942369	5.216945	5.491521	5.766096	6.109316	6.383893
90	0.068644	0.068644	0.068644	0.068644	0.137288	0.068644	0.068644	0.068644

-以下空白-



## 光強數據表(十)

### 光強數據表(cd)

第 10 頁 共 10 頁

$\gamma/C(^{\circ})$	<b>360.0</b>
<b>0</b>	<b>1742.871</b>
<b>5</b>	<b>1660.498</b>
<b>10</b>	<b>1414.753</b>
<b>15</b>	<b>1094.185</b>
<b>20</b>	<b>786.6603</b>
<b>25</b>	<b>540.2283</b>
<b>30</b>	<b>355.5073</b>
<b>35</b>	<b>229.6142</b>
<b>40</b>	<b>146.9668</b>
<b>45</b>	<b>98.64144</b>
<b>50</b>	<b>75.50841</b>
<b>55</b>	<b>61.43639</b>
<b>60</b>	<b>49.83555</b>
<b>65</b>	<b>39.95081</b>
<b>70</b>	<b>30.68387</b>
<b>75</b>	<b>22.10337</b>
<b>80</b>	<b>14.07202</b>
<b>85</b>	<b>6.589825</b>
<b>90</b>	<b>0.068644</b>

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-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 -