

Test Report for Luminous Intensity Distributions

Test Standard : CIE 70 (1987) 、 CIE 84 (1989)

Date of Receipt : 2019 / 01 / 15

Test Date : 2019 / 01 / 15 ~ 2019 / 03 / 19

1. Issue Date for test report : 2019 / 03 / 25
2. Report No : 19011509
3. Total pages : 20
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5. Test sample is not sampling by laboratory, test result relate only to the items tested.
6. Test report is not responsible for advertisement or promotion for products.

Approved Signatory:



毅豐光電股份有限公司
報告簽署人
黃錫偉

Test Report

Information for test items

Applicant : CoolLED Corp

Applicant address : 5F.-3, No.83, Sec. 2, Gongdao 5th Rd., East Dist., Hsinchu
City 30070, Taiwan, R.O.C.

Manufacturer : CoolLED Corp

Manufacturer address : 5F.-3, No.83, Sec. 2, Gongdao 5th Rd., East Dist.,
Hsinchu City 30070, Taiwan, R.O.C.

Product name : 8500lm LED High-bay

Trademark or brand name : CoolLED

Product model number : C3085C-001

Rated input voltage(V) : 100~277

Rated input frequency(Hz) : 50 / 60

Rated input power(W) : 60

Brand / model of controller : MEAN WELL / HBG-60-1400

Outward appearance size : Φ 361 mm 、 H 205 mm

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Test Content

Test Condition

Temperature (°C)	25.2
Humidity (% RH)	58.5
γ Axis measurement of angles (°)	5
C Axis measurement of angles (°)	5

Electrical Test

Test item	Test Result
Voltage(V)	220.0
Frequency(Hz)	60
Current (A)	0.280
Watt (W)	59.8
Power factor (PF)	0.971

Luminosity Test

Test item	Test Result
Total luminous flux of luminaires (lm)	8532.3
Initial luminaires efficiency(lm/W)	142.7
Central intensity (cd)	3549.8
Max intensity (cd)	3574.8
Angle for max intensity (°)	C : 260.0 γ : 5.0
Beam Angle (50% I _{max})	C0_180 Left=53.7 Right=52.5
	C90_270 Left=53.9 Right=52.1
Color temperature(K)	5040
Chromaticity Coordinates	x : 0.3449 y : 0.3567
Rendering Index(Ra)	82.5
R9	5
UGR , Unified Glare Rating	Viewing direction at right angles to lamp axis
	24.5
	Viewing direction parallel to lamp axis
	24.5

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Diagram for luminous intensity distribution I

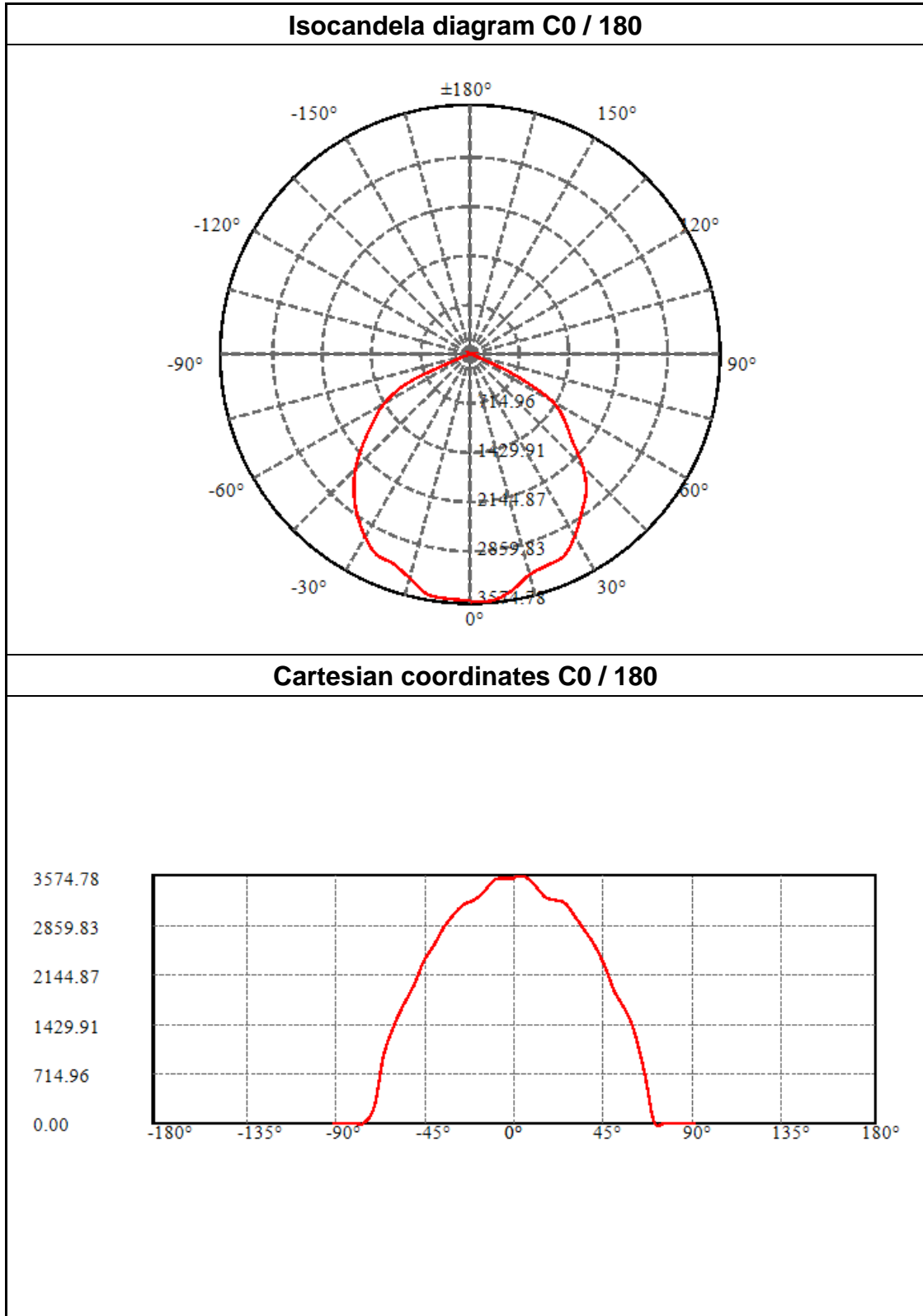


Diagram for luminous intensity distribution II

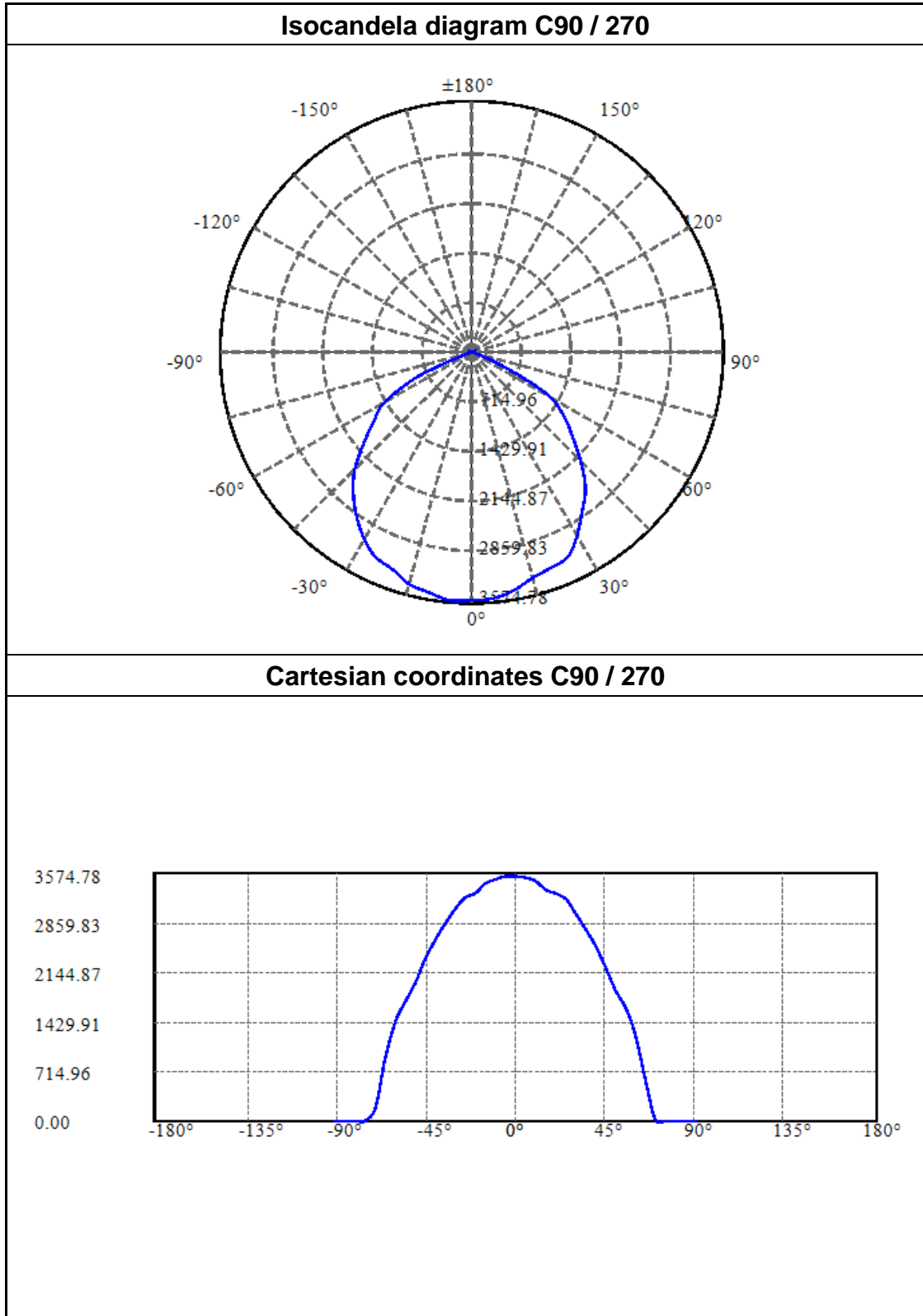
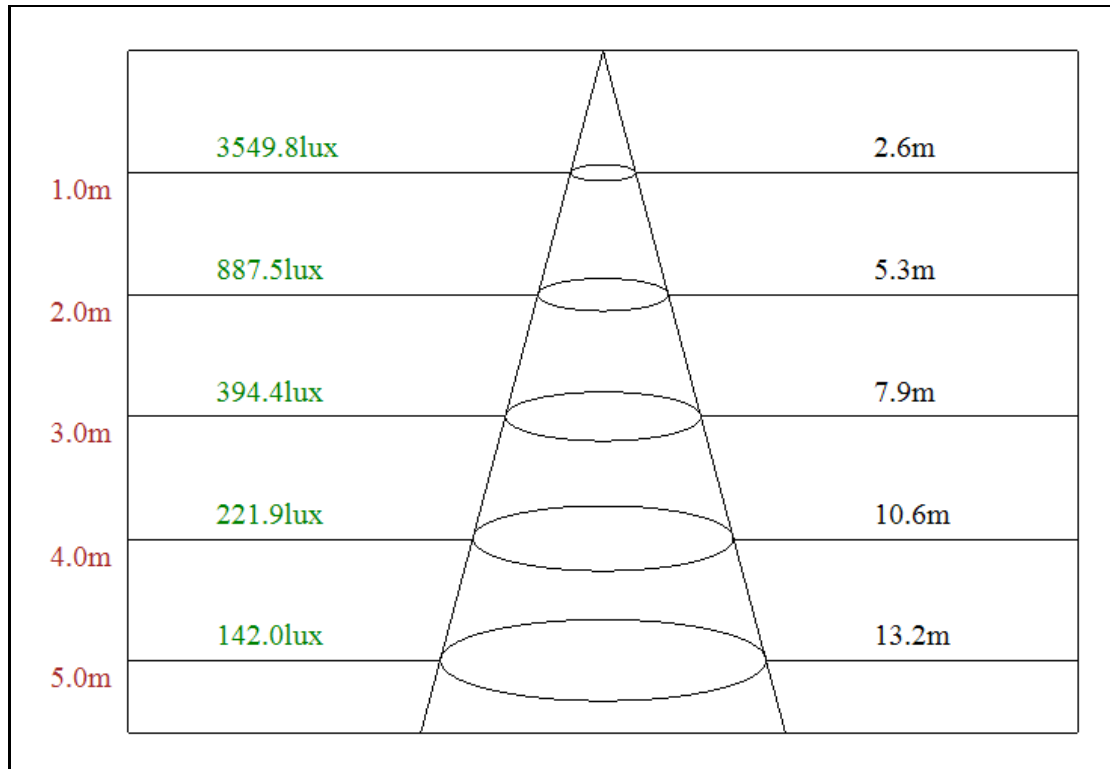


Diagram for illumination distance



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Test Results

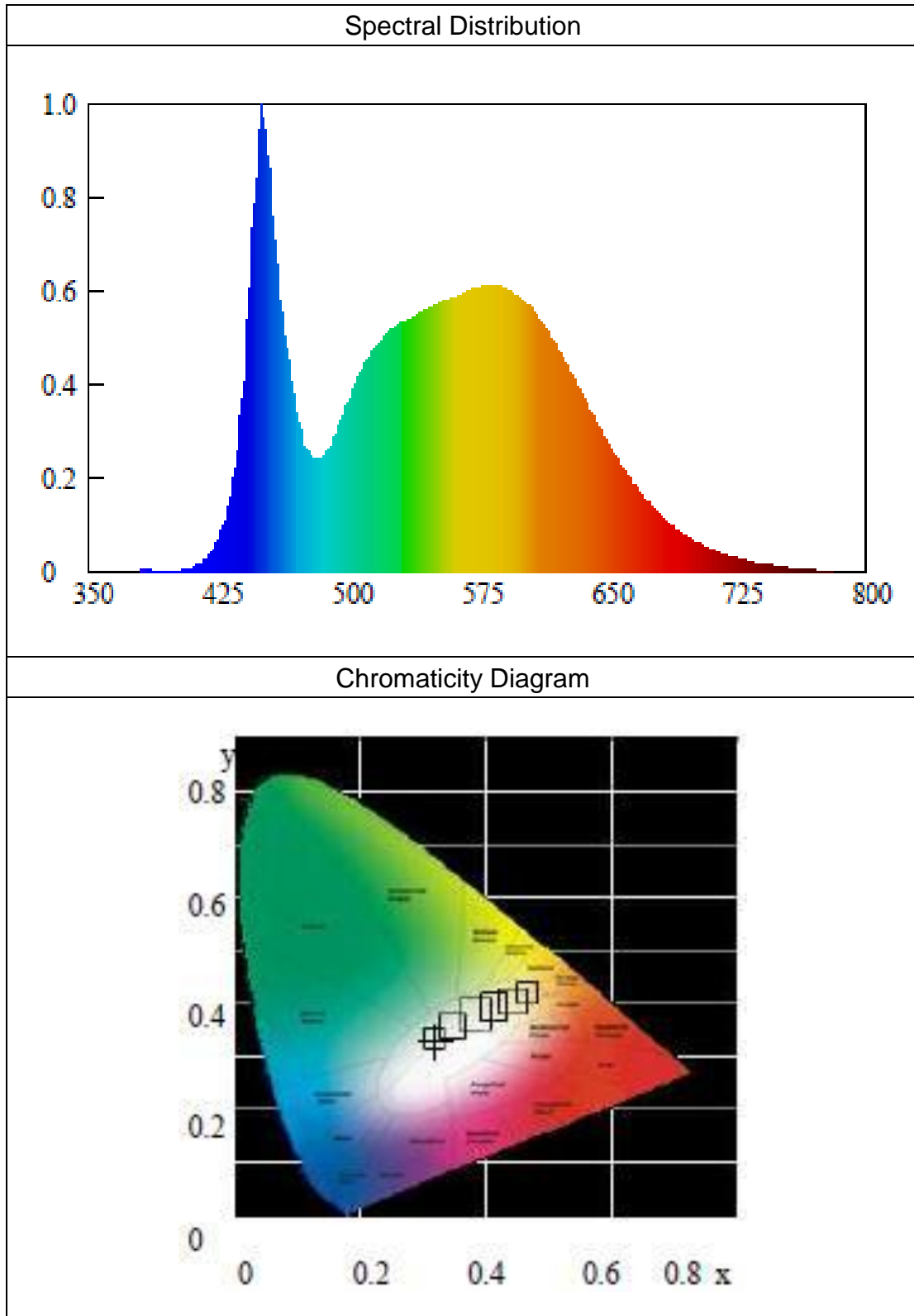
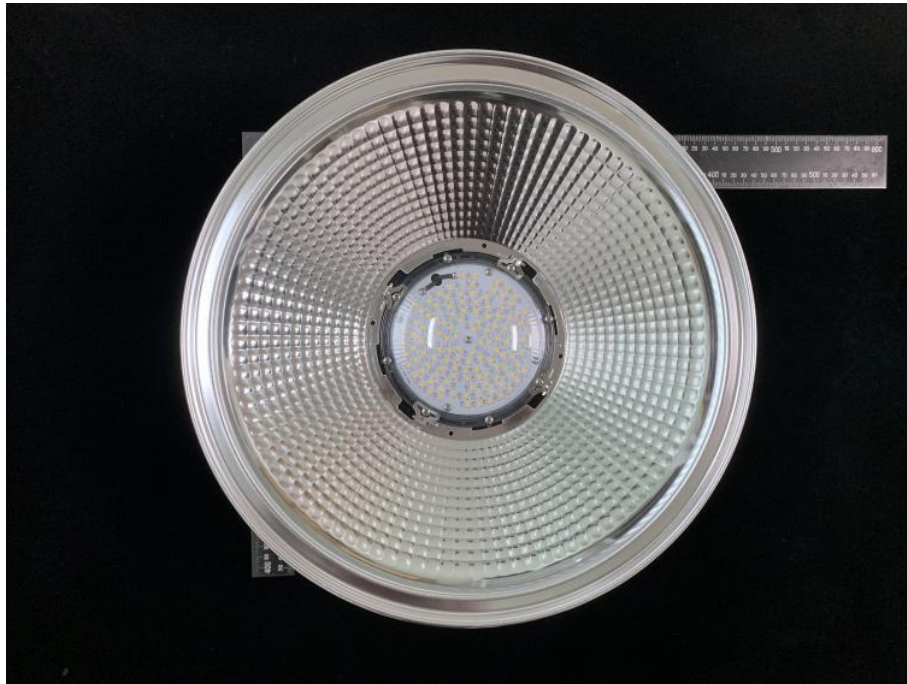


Photo for test items

The appearance of photo

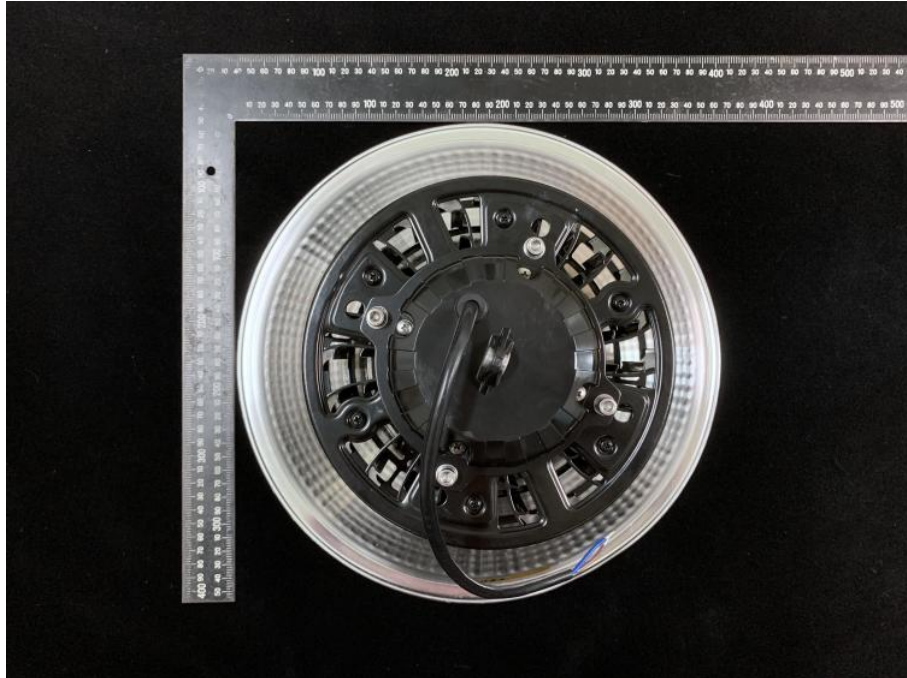


The appearance of photo

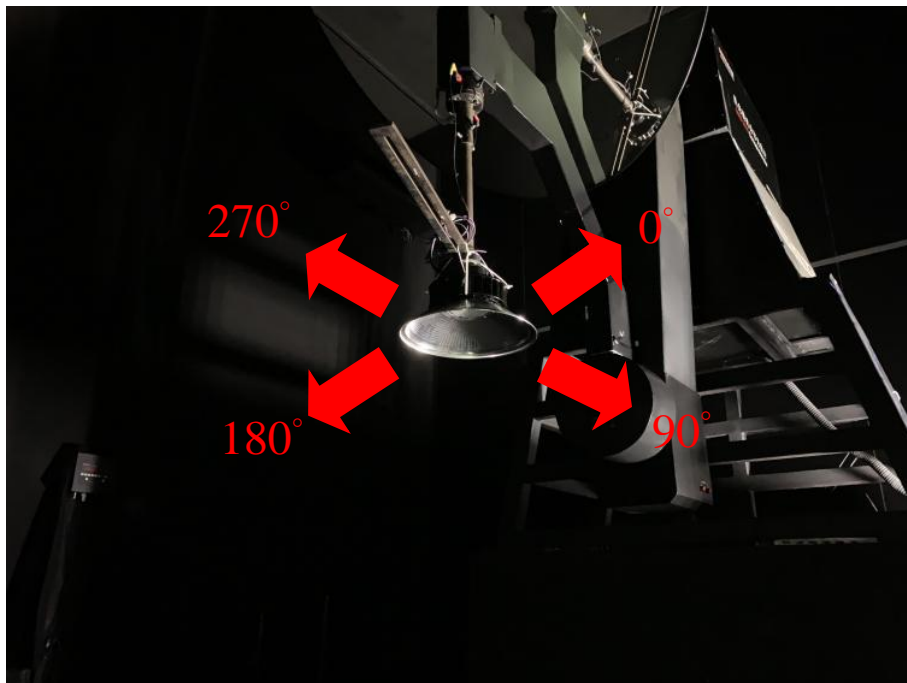


測試樣品照片

測試樣品外觀



測試樣品架設方向





Data for luminous intensity (1)

Intensity data(cd)

$\gamma/C(^{\circ})$	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0
0	3549.833	3549.042	3550.229	3547.853	3546.269	3538.745	3545.874	3541.517
5	3549.042	3526.469	3509.044	3507.064	3511.42	3530.825	3533.993	3534.785
10	3451.227	3434.595	3414.398	3412.814	3421.13	3440.931	3428.654	3435.387
15	3273.418	3256.786	3265.102	3263.914	3262.726	3276.982	3287.675	3281.735
20	3211.245	3204.909	3208.077	3211.245	3204.513	3210.057	3217.185	3219.957
25	3184.712	3183.92	3184.712	3183.524	3177.98	3177.584	3193.82	3198.573
30	3007.696	2997.003	2993.439	2999.38	3013.24	2999.776	3004.924	3001.36
35	2785.93	2784.742	2785.138	2792.662	2785.534	2788.702	2781.178	2772.862
40	2568.521	2561.789	2558.62	2548.72	2538.028	2547.928	2549.512	2553.076
45	2273.493	2277.057	2279.433	2261.217	2260.425	2253.693	2232.704	2248.545
50	1904.412	1904.808	1892.532	1892.136	1892.136	1881.047	1869.959	1862.831
55	1641.857	1617.305	1620.869	1609.781	1607.801	1618.097	1608.197	1614.929
60	1340.098	1336.534	1312.377	1292.577	1288.22	1313.169	1292.577	1287.032
65	700.1456	655.7925	633.616	636.3881	614.6075	590.4509	582.9267	538.1776
70	33.26484	34.84888	19.40449	11.8803	20.59252	12.67232	23.36459	9.50424
75	0	0	0	0	0	0	0	0
80	0	0	0	0	0	0	0	0
85	0	0	0	0	0	0	0	0
90	0	0	0	0	0	0	0	0

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Data for luminous intensity (2)

Intensity data(cd) Page: 2 Total:10

$\gamma/C(^{\circ})$	40.0	45.0	50.0	55.0	60.0	65.0	70.0	75.0
0	3546.666	3548.25	3547.853	3553.397	3546.666	3549.833	3549.042	3549.042
5	3523.301	3526.865	3511.816	3495.184	3492.016	3494.392	3506.668	3499.936
10	3404.498	3405.686	3440.139	3433.802	3416.774	3425.486	3417.17	3416.378
15	3303.911	3280.943	3300.347	3301.535	3309.059	3309.851	3303.515	3299.555
20	3240.55	3236.986	3253.618	3259.162	3257.182	3262.726	3260.746	3265.894
25	3188.276	3199.76	3201.344	3201.344	3202.533	3191.444	3202.137	3202.929
30	2988.291	2993.439	2997.003	2994.231	2995.419	2991.459	2985.519	3000.172
35	2771.278	2774.446	2781.178	2774.842	2776.822	2778.406	2769.694	2777.614
40	2551.888	2551.096	2537.632	2537.236	2533.276	2541.196	2525.751	2529.316
45	2223.2	2218.052	2208.548	2202.211	2207.756	2196.271	2212.508	2210.132
50	1857.287	1845.802	1864.415	1861.643	1866.791	1864.811	1871.939	1864.415
55	1607.801	1599.88	1602.652	1603.048	1611.365	1620.869	1622.057	1608.197
60	1273.568	1239.511	1258.52	1234.363	1246.639	1239.115	1231.195	1227.235
65	546.0977	528.6733	529.8614	508.8728	501.3486	517.981	509.6648	531.0494
70	12.27631	3.9601	10.29626	9.10823	2.77207	10.69227	9.10823	12.27631
75	0	0	0	0	0	0	0	0
80	0	0	0	0	0	0	0	0
85	0	0	0	0	0	0	0	0
90	0	0	0	0	0	0	0	0

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Data for luminous intensity (3)

Intensity data(cd)		Page: 3 Total:10						
$\gamma/C(^{\circ})$	80.0	85.0	90.0	95.0	100.0	105.0	110.0	115.0
0	3543.497	3540.329	3537.953	3543.101	3532.013	3535.181	3532.409	3535.973
5	3506.272	3520.133	3511.025	3502.708	3500.728	3492.808	3501.917	3529.637
10	3444.495	3442.515	3455.187	3414.002	3424.298	3444.495	3450.831	3420.338
15	3313.02	3297.179	3329.256	3332.424	3342.72	3349.848	3343.908	3346.68
20	3258.766	3265.498	3281.735	3269.854	3269.854	3269.854	3265.498	3262.33
25	3212.037	3204.513	3206.097	3204.909	3198.969	3214.413	3208.077	3191.841
30	2995.419	2996.607	2995.419	2986.707	2981.955	2996.607	3002.548	3012.052
35	2777.614	2767.714	2754.645	2776.426	2764.15	2772.07	2768.902	2765.734
40	2524.564	2529.316	2528.524	2539.216	2532.88	2527.336	2515.852	2528.92
45	2197.459	2198.251	2195.479	2201.023	2207.756	2216.468	2221.22	2228.744
50	1856.891	1870.355	1876.691	1872.731	1884.215	1877.879	1874.315	1883.027
55	1631.165	1618.493	1621.265	1602.652	1612.949	1605.82	1612.949	1631.561
60	1255.352	1233.571	1249.016	1262.084	1271.192	1275.152	1256.54	1288.616
65	536.5935	556.394	546.4938	553.6219	597.579	622.9237	640.7441	665.6927
70	8.31621	9.50424	18.21646	21.78055	27.7207	28.90873	34.05686	42.37307
75	0	0	0	0	0	0	0	0
80	0	0	0	0	0	0	0	0
85	0	0	0	0	0	0	0	0
90	0	0	0	0	0	0	0	0

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Data for luminous intensity (4)

Intensity data(cd) Page: 4 Total:10

$\gamma/C(^{\circ})$	120.0	125.0	130.0	135.0	140.0	145.0	150.0	155.0
0	3533.597	3526.865	3525.677	3524.885	3524.093	3526.073	3522.113	3522.509
5	3537.953	3537.557	3546.666	3533.201	3526.865	3524.885	3555.377	3567.258
10	3422.714	3455.979	3452.811	3456.375	3450.435	3433.406	3463.899	3498.748
15	3315.396	3327.672	3330.444	3319.752	3311.04	3326.88	3302.723	3328.86
20	3250.054	3247.678	3235.005	3224.709	3227.877	3224.313	3213.621	3208.077
25	3185.108	3185.9	3179.564	3180.356	3176.792	3178.376	3154.615	3161.744
30	3000.568	3007.3	3001.756	2989.875	2991.459	2995.419	3000.568	2996.607
35	2773.258	2775.634	2764.942	2768.902	2779.99	2793.454	2789.098	2792.662
40	2536.84	2551.492	2543.572	2559.016	2547.532	2548.72	2551.888	2581.985
45	2223.2	2241.417	2253.297	2256.465	2244.188	2276.661	2276.661	2290.522
50	1900.056	1878.275	1896.096	1902.828	1915.5	1938.469	1932.529	1940.845
55	1632.749	1632.353	1629.977	1632.353	1645.422	1636.313	1658.886	1647.401
60	1294.953	1308.813	1329.01	1359.898	1357.522	1384.451	1384.451	1393.163
65	688.2654	687.8693	704.1057	749.2509	765.4873	779.7437	803.5043	840.7291
70	53.85736	64.15362	70.88579	95.0424	116.8229	144.5436	163.1561	168.3042
75	0	0	0	0	0	0	0	0
80	0	0	0	0	0	0	0	0
85	0	0	0	0	0	0	0	0
90	0	0	0	0	0	0	0	0

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Data for luminous intensity (5)

Page: 5 Total:10

Intensity data(cd)								
$\gamma/C(^{\circ})$	160.0	165.0	170.0	175.0	180.0	185.0	190.0	195.0
0	3522.509	3531.617	3517.361	3526.073	3522.509	3524.093	3519.341	3524.885
5	3540.725	3533.993	3547.061	3535.973	3525.281	3524.489	3547.458	3543.101
10	3484.096	3465.483	3459.147	3480.928	3501.52	3443.307	3462.711	3471.028
15	3295.991	3312.228	3341.928	3330.84	3334.008	3339.156	3346.68	3339.948
20	3207.285	3206.889	3200.157	3211.641	3210.057	3211.641	3207.681	3214.017
25	3155.011	3162.14	3148.279	3165.704	3155.803	3156.596	3168.476	3171.248
30	3014.428	3010.072	3021.16	3025.912	3022.744	3034.229	3030.268	3049.673
35	2794.643	2791.474	2814.443	2808.899	2816.027	2810.879	2815.631	2829.491
40	2567.729	2570.105	2587.133	2589.113	2584.757	2600.993	2614.458	2611.686
45	2293.69	2290.522	2298.046	2303.194	2321.41	2324.183	2317.054	2333.291
50	1970.15	1961.833	1985.198	1981.238	1990.742	2004.999	2010.939	2003.415
55	1682.25	1671.558	1682.646	1680.666	1702.051	1695.715	1687.399	1691.755
60	1410.192	1403.063	1422.864	1421.676	1425.24	1418.112	1426.032	1429.2
65	857.7576	883.8943	893.7945	923.4953	976.5607	971.0164	993.985	999.1332
70	207.9052	201.5691	222.1616	248.2982	247.9022	261.3666	289.4833	303.3436
75	0	0	0	0	0	0	0	0
80	0	0	0	0	0	0	0	0
85	0	0	0	0	0	0	0	0
90	0	0	0	0	0	0	0	0

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Data for luminous intensity (6)

Page: 6 Total:10

Intensity data(cd)								
$\gamma/C(^{\circ})$	200.0	205.0	210.0	215.0	220.0	225.0	230.0	235.0
0	3520.133	3523.301	3513.797	3524.489	3526.073	3531.617	3533.993	3537.557
5	3534.785	3546.666	3568.842	3557.358	3556.962	3541.517	3530.429	3547.061
10	3484.888	3501.917	3525.281	3491.62	3490.036	3507.064	3500.728	3488.056
15	3349.056	3353.808	3332.028	3355.789	3338.76	3339.552	3331.632	3345.888
20	3223.917	3208.473	3214.017	3216.393	3213.621	3208.869	3222.729	3229.065
25	3172.832	3169.664	3170.456	3169.268	3174.416	3180.356	3189.464	3195.8
30	3049.673	3056.009	3065.909	3072.245	3071.453	3074.226	3060.761	3074.621
35	2833.055	2833.451	2823.551	2826.323	2824.343	2824.739	2824.739	2822.363
40	2608.914	2600.993	2613.666	2623.566	2618.022	2614.854	2629.11	2629.11
45	2334.479	2339.231	2354.279	2343.191	2338.835	2357.052	2365.764	2364.576
50	2026.383	2008.563	2021.235	2019.255	2022.423	2033.511	2026.779	2032.719
55	1710.367	1715.119	1717.891	1702.051	1708.387	1712.347	1708.387	1706.803
60	1441.476	1442.664	1443.06	1436.328	1449.792	1439.496	1443.852	1458.505
65	995.5691	1019.33	1015.766	1010.221	1035.17	1015.766	993.5891	986.8569
70	302.5516	319.1841	323.1441	329.0843	331.8564	310.4718	299.7796	316.016
75	0	0	0	0	0	0	0	0
80	0	0	0	0	0	0	0	0
85	0	0	0	0	0	0	0	0
90	0	0	0	0	0	0	0	0

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Data for luminous intensity (7)

Intensity data(cd)									Page: 7 Total:10
$\gamma/C(^{\circ})$	240.0	245.0	250.0	255.0	260.0	265.0	270.0	275.0	
0	3533.201	3529.637	3531.617	3536.765	3530.033	3539.537	3533.993	3535.181	
5	3535.577	3545.081	3549.833	3565.278	3574.782	3547.458	3535.577	3528.449	
10	3496.372	3519.737	3499.144	3510.233	3522.113	3509.044	3476.968	3471.028	
15	3365.689	3375.193	3367.273	3400.538	3368.461	3357.373	3410.042	3365.689	
20	3247.678	3254.806	3274.21	3276.587	3278.962	3280.547	3285.695	3283.715	
25	3186.296	3203.721	3200.949	3222.333	3219.957	3227.877	3227.481	3240.154	
30	3057.593	3062.741	3054.029	3068.681	3061.157	3054.425	3072.245	3074.621	
35	2827.511	2826.719	2838.203	2850.48	2835.827	2846.916	2841.768	2848.104	
40	2621.586	2626.338	2612.874	2608.914	2620.398	2616.438	2623.17	2632.674	
45	2347.943	2340.023	2340.419	2348.339	2346.359	2328.935	2340.023	2362.2	
50	2031.135	2010.939	2016.483	2016.879	2008.959	2003.415	1987.574	1997.87	
55	1711.159	1727	1703.239	1723.039	1720.267	1711.951	1705.219	1698.487	
60	1458.109	1454.149	1448.604	1459.297	1447.417	1452.169	1440.684	1452.961	
65	966.2643	930.2274	914.783	917.1591	916.3671	877.162	883.1022	883.8943	
70	298.9875	289.4833	258.9905	242.3581	242.7541	201.9651	205.1332	200.381	
75	0	0	0	0	0	0	0	0	
80	0	0	0	0	0	0	0	0	
85	0	0	0	0	0	0	0	0	
90	0	0	0	0	0	0	0	0	

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Data for luminous intensity (8)

Page: 8 Total:10

Intensity data(cd)	280.0	285.0	290.0	295.0	300.0	305.0	310.0	315.0
γ/C(°)								
0	3543.101	3544.685	3543.101	3540.329	3542.705	3540.725	3543.894	3541.517
5	3524.885	3529.241	3524.093	3517.757	3551.813	3553.793	3537.953	3522.509
10	3509.441	3474.987	3452.415	3460.335	3460.335	3433.406	3468.256	3451.623
15	3365.689	3387.469	3333.612	3356.581	3337.176	3292.823	3327.276	3305.495
20	3275.398	3261.934	3270.25	3250.054	3254.806	3229.857	3223.917	3212.037
25	3233.818	3235.797	3229.065	3225.501	3217.581	3214.017	3218.373	3211.641
30	3075.81	3071.453	3084.126	3085.314	3092.046	3088.086	3089.67	3070.661
35	2852.46	2847.708	2849.292	2858.4	2861.964	2842.956	2838.996	2836.224
40	2626.734	2627.922	2636.635	2627.13	2630.694	2622.378	2616.042	2628.714
45	2357.448	2333.687	2338.439	2340.023	2352.695	2356.259	2343.587	2336.855
50	2008.167	1997.87	2008.959	2019.651	2005.791	2012.127	1996.286	1989.95
55	1722.643	1693.339	1717.495	1698.883	1712.743	1705.615	1687.795	1691.359
60	1438.704	1456.921	1451.377	1437.516	1436.724	1432.368	1428.804	1421.28
65	896.9626	889.4384	885.4783	896.1706	892.2105	873.202	883.8943	856.9656
70	212.2614	216.6175	209.8853	228.8938	232.0619	200.7771	205.1332	195.6289
75	0	0	0	0	0	0	0	0
80	0	0	0	0	0	0	0	0
85	0	0	0	0	0	0	0	0
90	0	0	0	0	0	0	0	0

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Data for luminous intensity (9)

Page: 9 Total:10

Intensity data(cd)	320.0	325.0	330.0	335.0	340.0	345.0	350.0	355.0
γ/C(°)	320.0	325.0	330.0	335.0	340.0	345.0	350.0	355.0
0	3541.913	3545.874	3544.685	3547.458	3548.646	3554.585	3550.625	3557.754
5	3515.381	3532.409	3520.925	3502.708	3508.648	3520.529	3530.825	3527.657
10	3406.478	3425.882	3473.404	3444.495	3426.279	3415.982	3404.894	3417.962
15	3308.663	3275.398	3288.071	3276.982	3269.854	3273.023	3281.339	3264.707
20	3229.065	3217.977	3205.701	3209.265	3203.325	3201.741	3204.513	3188.672
25	3204.513	3191.841	3190.256	3183.524	3182.336	3187.484	3180.356	3180.752
30	3074.621	3061.949	3048.485	3049.277	3040.961	3031.457	3026.308	3018.784
35	2829.491	2825.135	2814.443	2801.771	2805.335	2807.315	2791.87	2793.454
40	2612.478	2616.042	2600.597	2593.073	2580.005	2574.461	2557.036	2567.333
45	2346.359	2336.063	2309.53	2328.539	2309.134	2299.63	2278.245	2292.502
50	1996.682	1991.534	1982.426	1964.209	1947.973	1949.161	1937.281	1931.341
55	1690.963	1678.686	1679.874	1658.886	1652.154	1653.342	1647.005	1644.233
60	1403.855	1408.211	1399.499	1393.163	1396.727	1395.539	1386.431	1358.71
65	843.8973	835.9771	805.8804	787.6638	789.6439	762.7152	741.7267	691.8294
70	194.4409	166.3242	173.4524	139.7915	113.2589	92.66634	82.76609	69.30174
75	0	0	0	0	0	0	0	0
80	0	0	0	0	0	0	0	0
85	0	0	0	0	0	0	0	0
90	0	0	0	0	0	0	0	0

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Data for luminous intensity (10)

Intensity data(cd)

Page: 10 Total:10

$\gamma/C(^{\circ})$	360.0
0	3549.833
5	3549.042
10	3451.227
15	3273.418
20	3211.245
25	3184.712
30	3007.696
35	2785.93
40	2568.521
45	2273.493
50	1904.412
55	1641.857
60	1340.098
65	700.1456
70	33.26484
75	0
80	0
85	0
90	0

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Equipment list and testing engineer for test

Item	Equipment No	Equipment	Manufacturer / Type / Series No
1	107A-01	Magnetic angle locator	ACUANGLE A-300
2	99E-05	Digital power meter	YOKOGAWA WT210 (91K116100)
3	99E-08	Digital power meter	YOKOGAWA WT210 (91K539455)
4	99E-17	AC Power Source	APC AFC-5KW
5	99O-01	Goniophotometer System	Sensing GMS-2000
6	99O-22	Spectroradiometer (2π)	Sensing SPR-3000
7	99O-23	Integrating sphere (2π)	Sensing
8	104O-29	Photometric standard lamp 110V/100W	Sensing (S11030003)
9	103T-14	Temperature and humidity records	TANDD(TR-72UI/F8043A00)
Testing engineer : Chun-Tse Liu			

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