

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 : 19011508
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-601

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 271 mm 、 H 236 mm

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Test Content

Test Condition

Temperature (°C)	24.7
Humidity (% RH)	59.6
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)	0.279
Watt (W)	59.7
Power factor (PF)	0.973

Luminosity Test

Test item	Test Result
Total luminous flux of luminaires (lm)	7677.5
Initial luminaires efficiency(lm/W)	128.6
Central intensity (cd)	7411.0
Max intensity (cd)	7430.1
Angle for max intensity (°)	C : 325.0 γ : 0.0
Beam Angle (50% I _{max})	C0_180 Left=28.4 Right=29.3
	C90_270 Left=28.6 Right=28.8
Color temperature(K)	5040
Chromaticity Coordinates	x : 0.3445 y : 0.3569
Rendering Index(Ra)	82.3
R9	4
UGR , Unified Glare Rating	Viewing direction at right angles to lamp axis
	19.4
	Viewing direction parallel to lamp axis
	19.4

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Diagram for luminous intensity distribution I

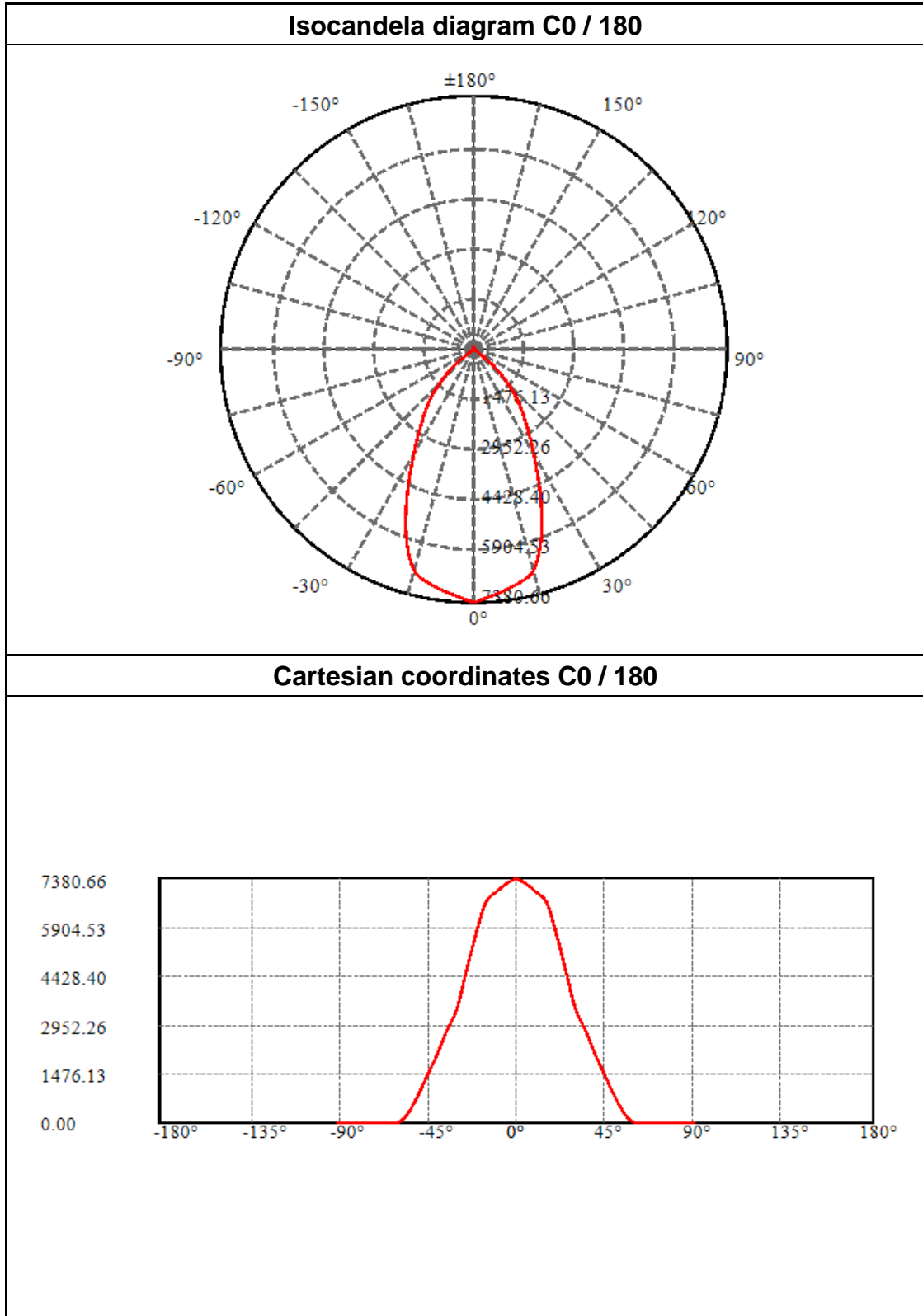


Diagram for luminous intensity distribution II

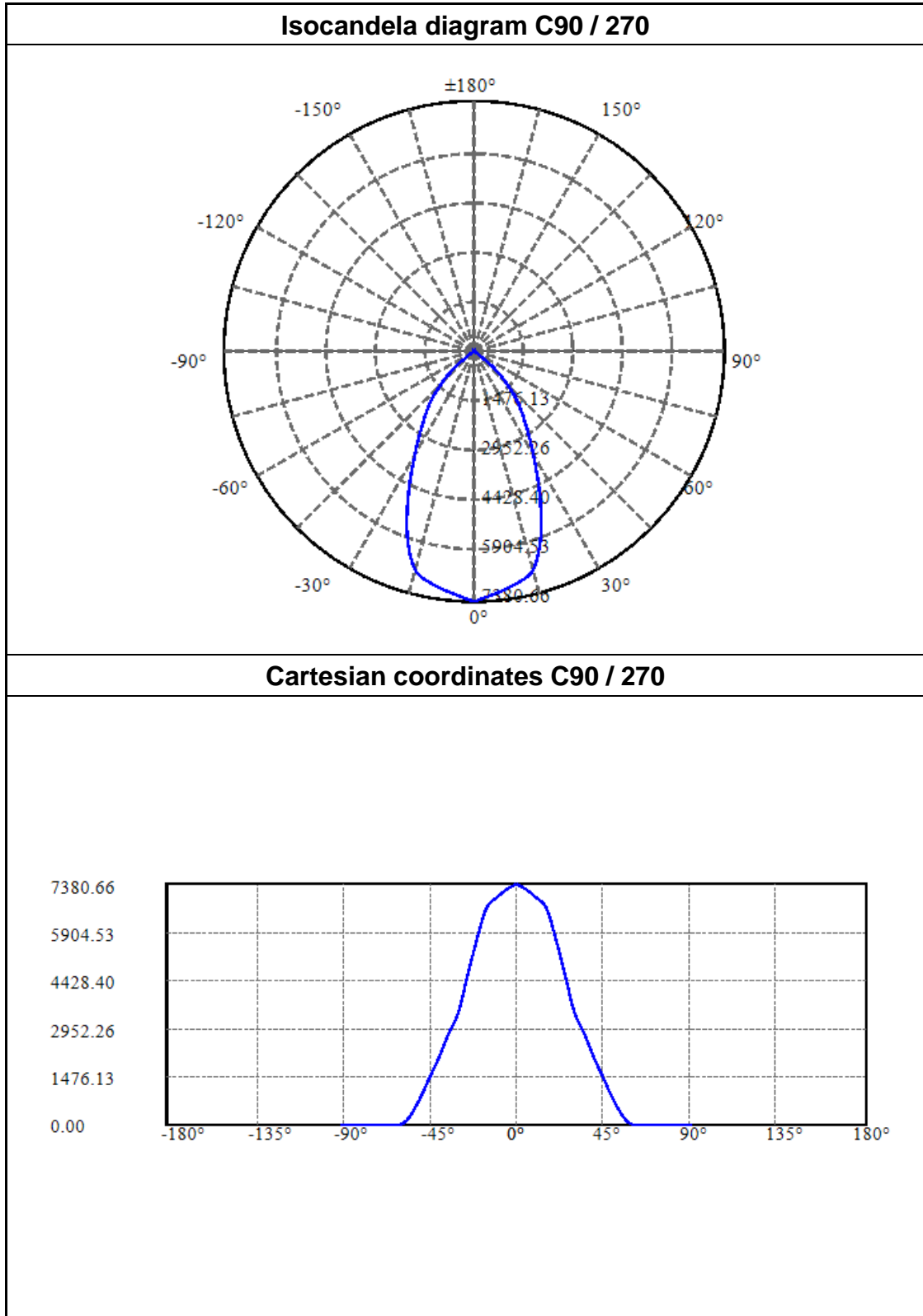
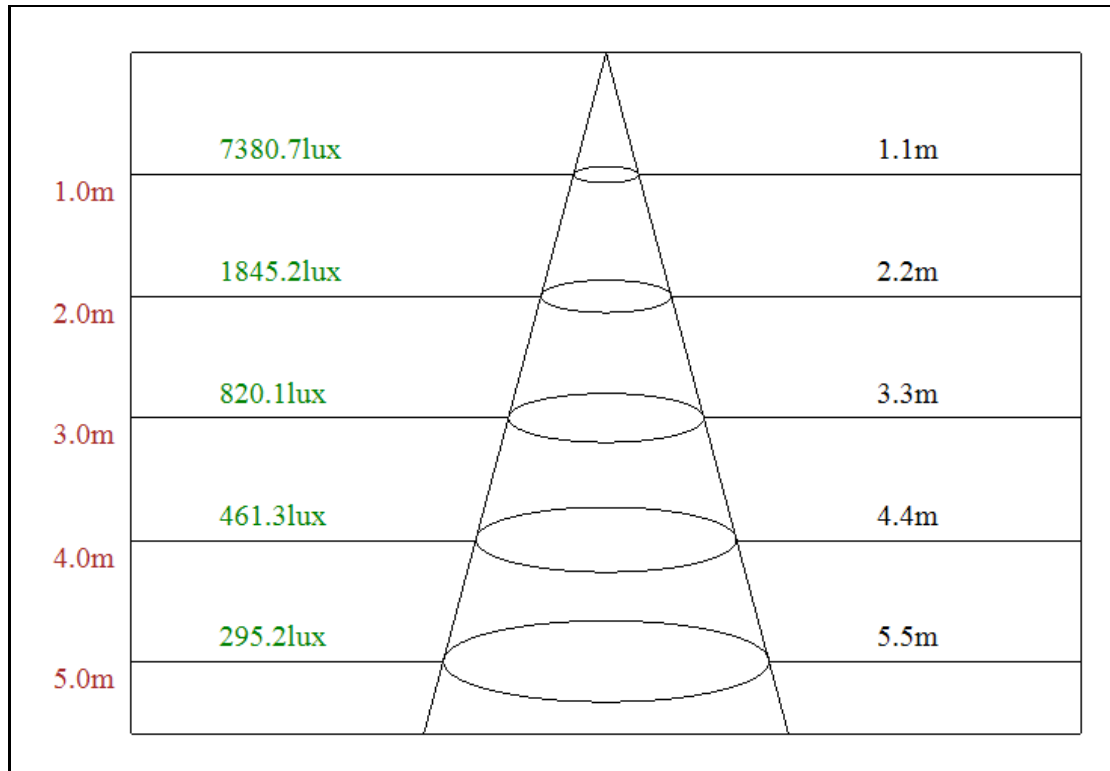


Diagram for illumination distance



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Test Results

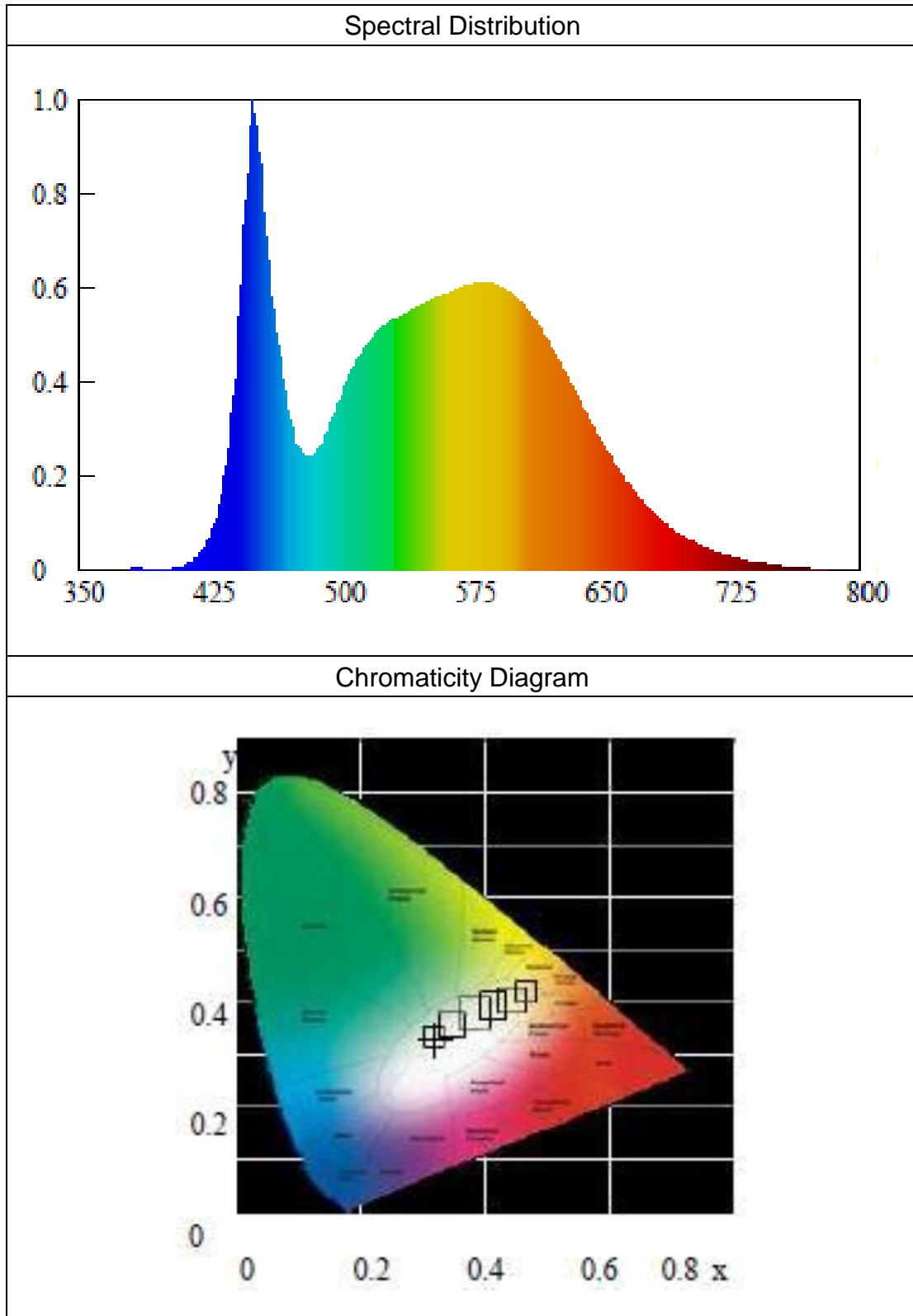
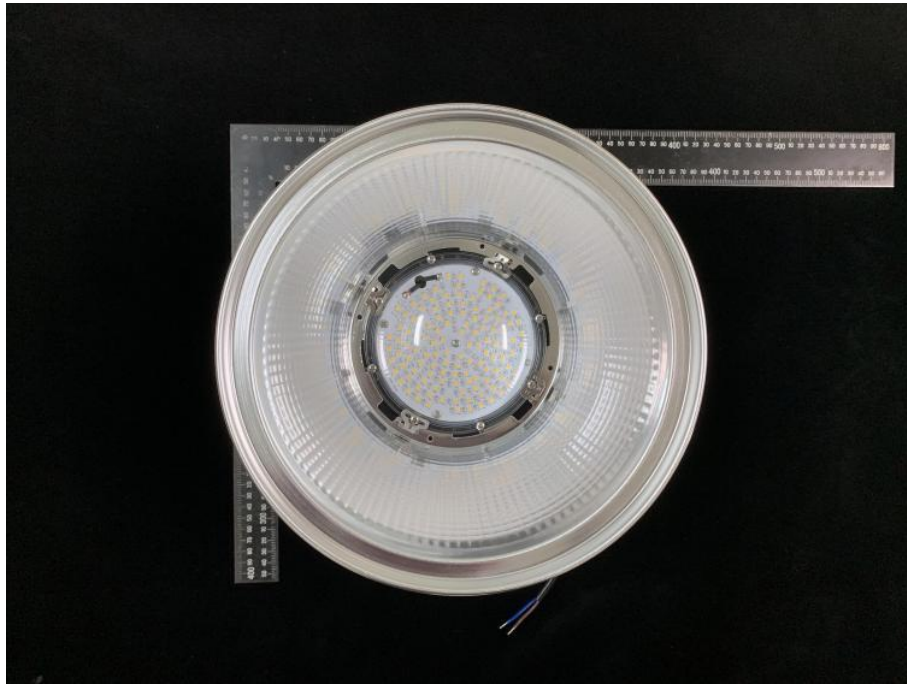


Photo for test items

The appearance of photo



The appearance of photo

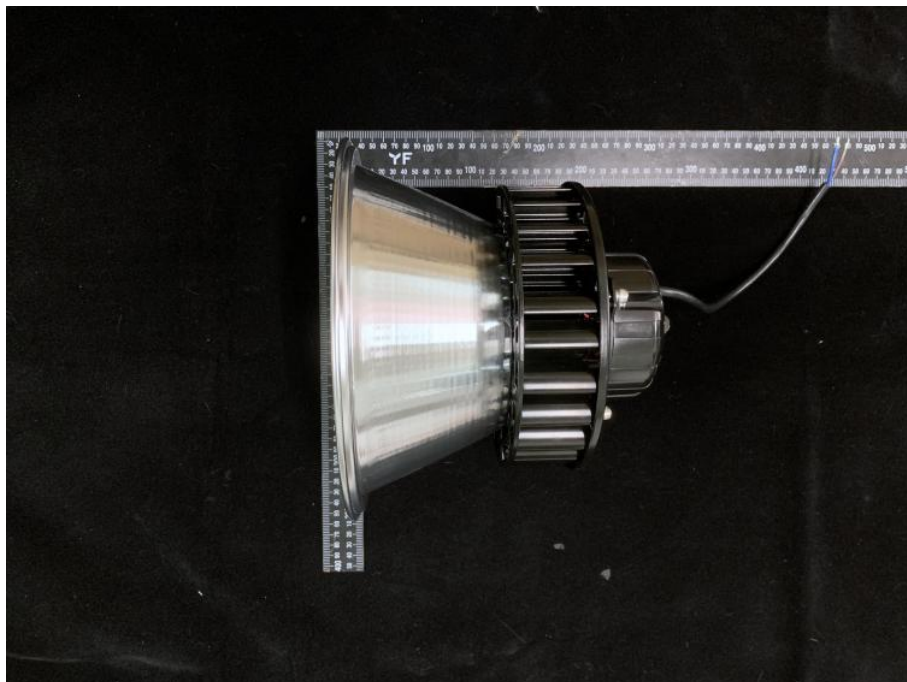
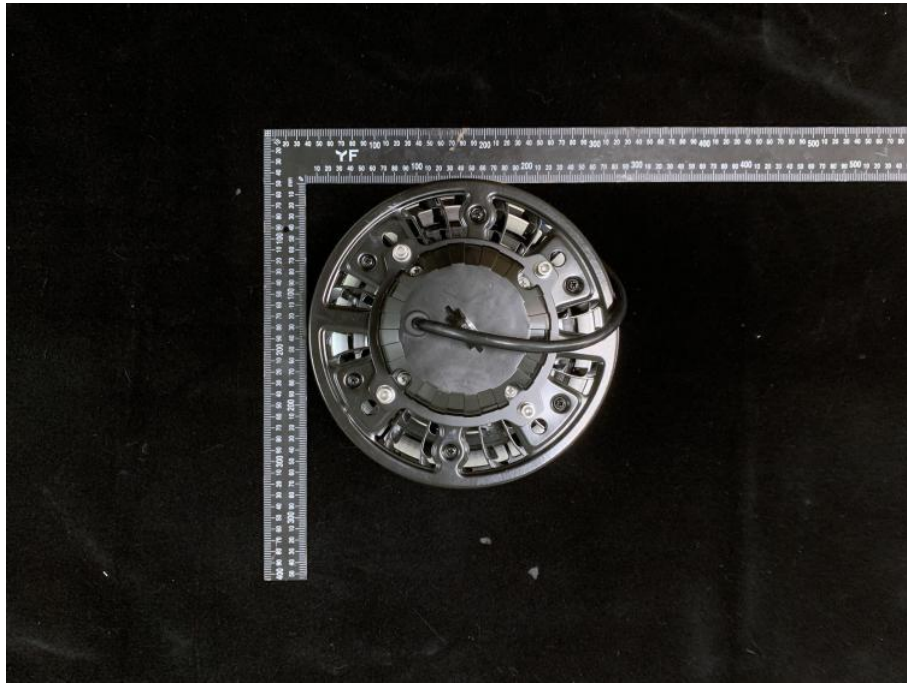
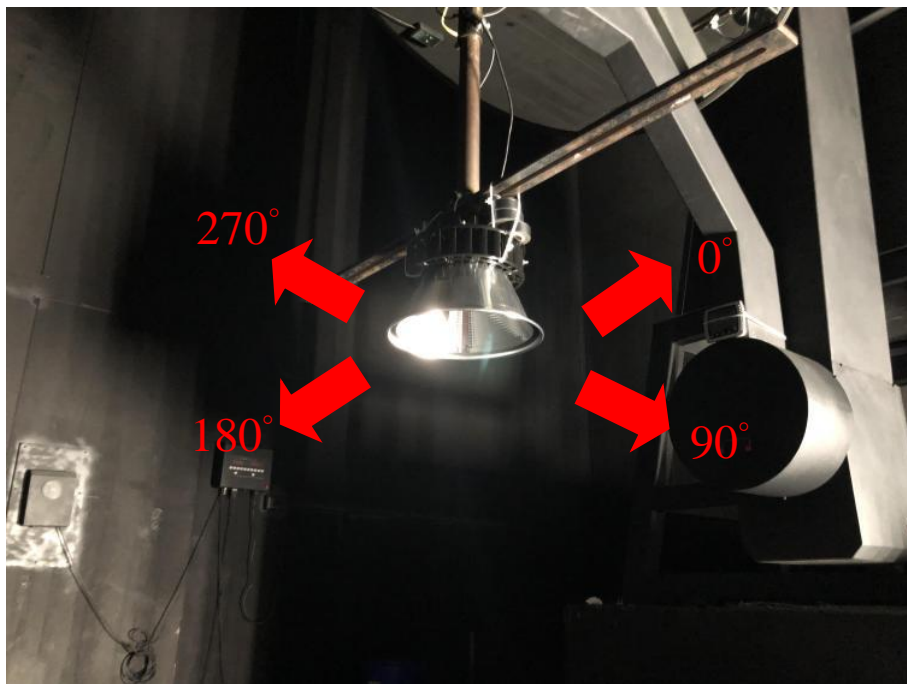


Photo for test items

The appearance of photo



Direction for luminaire position in goniophotometer





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	7410.983	7411.691	7408.86	7419.474	7415.937	7413.813	7413.813	7404.616
5	7070.647	7103.194	7193.055	7281.5	7273.009	7220.65	7124.422	7093.997
10	6933.38	6891.634	6842.813	6876.775	6976.542	6983.617	6923.475	6973.003
15	6624.177	6672.998	6622.054	6570.402	6525.826	6588.799	6694.933	6755.075
20	5851.521	5889.022	5916.617	5877.701	5831.002	5880.531	5913.079	5881.946
25	4654.33	4681.925	4739.944	4768.954	4756.218	4725.085	4730.746	4679.094
30	3553.366	3580.961	3612.801	3648.887	3629.075	3619.169	3602.896	3584.499
35	2821.042	2847.221	2889.675	2870.571	2854.297	2863.495	2859.957	2834.485
40	2111.359	2114.189	2134.708	2119.85	2148.86	2145.322	2103.576	2074.566
45	1417.243	1437.054	1412.29	1427.856	1414.412	1405.214	1451.913	1450.498
50	831.3829	837.751	829.9678	851.9022	863.9307	819.3545	863.9307	856.8551
55	304.9583	309.2037	321.2322	298.5903	283.7316	294.345	292.2223	301.4206
60	14.85876	14.1512	14.1512	13.44364	13.44364	12.73608	12.73608	12.73608
65	8.49072	8.49072	7.78316	7.78316	7.78316	7.0756	7.0756	7.0756
70	4.95292	4.24536	4.24536	4.24536	4.24536	4.24536	4.24536	3.5378
75	2.12268	2.12268	2.12268	2.12268	2.12268	2.12268	2.12268	2.12268
80	0.70756	0.70756	0.70756	0.70756	0.70756	0.70756	0.70756	0.70756
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	7411.691	7394.002	7393.294	7381.973	7365.7	7362.87	7356.501	7333.859
5	7103.902	7190.225	7246.829	7166.875	7069.232	7101.072	7208.621	7277.254
10	7018.288	7067.817	7083.383	7092.582	7087.628	7064.986	7061.448	7052.25
15	6806.02	6798.236	6860.502	6862.625	6818.756	6748.708	6765.689	6825.124
20	5870.625	5861.427	5908.126	5895.39	5839.493	5810.482	5839.493	5847.276
25	4628.15	4621.074	4657.868	4650.084	4586.404	4599.14	4620.367	4584.281
30	3537.093	3505.96	3516.573	3498.177	3488.271	3490.394	3517.988	3496.054
35	2809.013	2790.617	2803.353	2801.938	2791.324	2793.447	2784.249	2758.069
40	2059	2096.5	2089.425	2065.368	2095.085	2088.01	2078.811	2087.302
45	1425.734	1446.96	1434.932	1408.752	1420.073	1401.676	1399.554	1405.922
50	823.5999	808.0335	799.5428	808.7411	825.7225	812.2789	779.0235	804.4957
55	297.1752	304.2508	295.0525	283.7316	268.1653	276.656	254.014	265.335
60	12.73608	12.02852	12.02852	12.02852	12.02852	12.02852	12.02852	12.02852
65	7.0756	7.0756	7.0756	7.0756	6.36804	6.36804	6.36804	6.36804
70	3.5378	3.5378	3.5378	3.5378	3.5378	3.5378	3.5378	3.5378
75	2.12268	2.12268	2.12268	1.41512	2.12268	2.12268	1.41512	1.41512
80	0.70756	0.70756	0.70756	0.70756	0.70756	0.70756	0.70756	0.70756
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	7340.227	7351.549	7343.765	7350.133	7348.718	7356.501	7350.133	7359.332
5	7290.698	7175.366	7089.751	7094.705	7151.309	7137.865	7152.724	7214.282
10	7000.599	6981.494	6977.957	6951.07	6908.616	6931.257	6936.918	6880.313
15	6781.255	6755.075	6655.31	6608.61	6573.94	6478.419	6435.258	6430.306
20	5836.662	5837.37	5808.36	5737.604	5705.764	5643.499	5591.847	5556.469
25	4563.054	4548.196	4533.337	4485.223	4450.552	4445.6	4461.166	4405.976
30	3474.119	3437.326	3428.128	3418.222	3398.411	3400.533	3419.638	3394.873
35	2738.965	2729.059	2715.615	2721.983	2721.983	2753.823	2747.455	2746.748
40	2058.292	2060.415	2069.613	2052.632	2056.169	2057.584	2054.047	2067.49
45	1400.969	1404.507	1403.092	1421.488	1381.157	1411.582	1393.186	1372.666
50	788.2218	807.326	754.259	766.2874	774.7782	753.5515	760.627	731.6171
55	258.2594	247.646	249.0611	234.9099	228.5419	225.7116	210.1453	220.0511
60	12.02852	12.02852	12.02852	12.02852	12.02852	12.73608	12.73608	13.44364
65	6.36804	7.0756	7.0756	7.0756	7.0756	7.0756	7.0756	7.78316
70	3.5378	3.5378	3.5378	3.5378	3.5378	3.5378	3.5378	4.24536
75	1.41512	1.41512	1.41512	1.41512	1.41512	2.12268	2.12268	2.12268
80	0.70756	0.70756	0.70756	0.70756	0.70756	0.70756	0.70756	0.70756
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)

Page: 4 Total:10

Intensity data(cd)	120.0	125.0	130.0	135.0	140.0	145.0	150.0	155.0
γ/C(°)	120.0	125.0	130.0	135.0	140.0	145.0	150.0	155.0
0	7355.086	7361.455	7366.407	7370.652	7369.237	7361.455	7364.285	7358.624
5	7202.961	7166.168	7180.319	7205.791	7192.347	7204.376	7256.028	7248.245
10	6909.324	6939.748	6975.834	6980.787	7022.533	7066.402	7091.874	6993.523
15	6450.824	6529.363	6622.761	6631.96	6619.931	6646.111	6735.972	6772.764
20	5556.469	5605.998	5658.357	5653.404	5622.979	5657.649	5729.113	5722.038
25	4351.494	4355.739	4385.457	4379.796	4367.768	4379.089	4449.845	4428.618
30	3355.957	3341.098	3350.297	3355.957	3336.853	3360.91	3362.325	3363.032
35	2718.446	2685.19	2683.775	2664.671	2666.086	2670.331	2682.36	2651.935
40	2067.49	2021.499	2017.961	2010.178	2014.423	2017.961	2008.763	2023.621
45	1379.742	1379.742	1369.836	1374.789	1363.468	1344.364	1339.411	1314.646
50	766.2874	752.8439	752.1362	728.0793	745.7682	740.1078	743.6456	718.881
55	203.0697	204.4848	200.9471	194.579	184.6732	191.0412	188.9185	194.579
60	13.44364	13.44364	14.1512	14.1512	14.1512	14.1512	14.1512	14.1512
65	7.78316	7.78316	7.78316	7.78316	7.78316	8.49072	7.78316	7.78316
70	4.24536	4.24536	4.24536	4.24536	4.24536	4.24536	4.24536	4.24536
75	2.12268	2.12268	2.12268	2.12268	2.12268	2.12268	2.12268	2.12268
80	0.70756	0.70756	0.70756	0.70756	0.70756	0.70756	0.70756	0.70756
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)

Intensity data(cd)

Page: 5 Total:10

$\gamma/C(^{\circ})$	160.0	165.0	170.0	175.0	180.0	185.0	190.0	195.0
0	7371.36	7362.87	7365.7	7357.208	7357.208	7351.549	7358.624	7351.549
5	7171.121	7149.894	7187.395	7257.443	7256.735	7263.104	7220.65	7172.536
10	6992.108	7081.261	7087.628	7059.326	7029.609	7060.741	7067.817	7083.383
15	6781.255	6760.028	6807.435	6835.737	6801.067	6765.689	6760.028	6772.057
20	5692.32	5682.415	5736.896	5778.643	5794.209	5781.472	5789.963	5763.077
25	4383.334	4391.117	4447.015	4461.166	4442.769	4456.213	4478.854	4463.996
30	3346.759	3339.683	3366.57	3382.137	3355.957	3358.08	3378.599	3387.09
35	2654.765	2642.737	2651.227	2630.708	2627.17	2613.019	2630	2664.671
40	2000.272	1978.338	1960.649	1965.602	1942.96	1944.375	1947.205	1959.941
45	1309.693	1345.779	1327.383	1352.855	1371.251	1311.816	1318.184	1323.137
50	733.7397	745.0607	723.8339	730.9095	725.249	713.928	718.881	740.8154
55	191.7488	198.8244	176.1824	186.0883	193.8714	189.6261	198.1168	203.7773
60	14.1512	13.44364	13.44364	12.73608	12.73608	12.02852	12.02852	12.02852
65	7.78316	7.78316	7.78316	7.0756	7.0756	7.0756	6.36804	6.36804
70	4.24536	4.24536	4.24536	3.5378	3.5378	3.5378	3.5378	3.5378
75	2.12268	2.12268	2.12268	2.12268	2.12268	1.41512	1.41512	1.41512
80	0.70756	0.70756	0.70756	0.70756	0.70756	0.70756	0.70756	0.70756
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)	200.0	205.0	210.0	215.0	220.0	225.0	230.0	235.0
γ/C(°)	200.0	205.0	210.0	215.0	220.0	225.0	230.0	235.0
0	7351.549	7359.332	7364.992	7366.407	7374.898	7371.36	7377.728	7371.36
5	7214.282	7227.726	7167.583	7149.894	7236.923	7245.414	7188.103	7109.563
10	6998.476	6990.693	7013.334	7106.732	7033.146	6960.976	6965.221	6949.654
15	6723.235	6682.904	6660.97	6701.301	6760.736	6733.141	6692.81	6655.31
20	5710.009	5722.038	5762.369	5801.285	5804.115	5818.266	5838.078	5806.238
25	4454.798	4478.854	4498.667	4492.298	4508.572	4517.063	4568.007	4567.3
30	3401.241	3411.147	3414.685	3397.703	3389.92	3428.836	3446.525	3462.799
35	2657.595	2673.162	2654.765	2653.35	2649.812	2662.548	2680.237	2687.313
40	1988.244	1981.168	1991.074	1974.8	1960.649	1978.338	1960.649	1973.385
45	1335.873	1323.845	1315.354	1297.665	1313.939	1321.015	1341.534	1321.722
50	731.6171	737.2775	733.0322	747.8909	736.5699	701.8995	737.2775	735.1548
55	201.6546	204.4848	200.2395	193.1639	207.3151	202.3622	200.2395	210.8529
60	12.02852	11.32096	11.32096	11.32096	11.32096	11.32096	11.32096	11.32096
65	6.36804	6.36804	6.36804	6.36804	6.36804	6.36804	6.36804	6.36804
70	3.5378	3.5378	2.83024	3.5378	3.5378	2.83024	2.83024	2.83024
75	1.41512	1.41512	1.41512	1.41512	1.41512	1.41512	1.41512	1.41512
80	0.70756	0.70756	0.70756	0.70756	0.70756	0.70756	0.70756	0.70756
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)

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$\gamma/C(^{\circ})$	240.0	245.0	250.0	255.0	260.0	265.0	270.0	275.0
0	7368.529	7374.19	7362.87	7376.313	7369.237	7370.652	7374.898	7375.605
5	7113.101	7079.138	7165.46	7282.915	7118.761	7033.146	7047.297	7083.383
10	6879.605	6893.757	6938.333	6947.532	6922.767	6941.164	6960.976	6932.673
15	6608.61	6639.743	6699.178	6713.329	6679.366	6640.451	6677.244	6717.575
20	5769.444	5729.821	5794.916	5800.577	5717.085	5635.715	5656.234	5740.434
25	4543.243	4504.327	4556.687	4563.762	4502.204	4430.741	4424.373	4476.732
30	3445.817	3443.695	3443.695	3423.175	3412.562	3396.288	3387.09	3405.486
35	2705.709	2717.738	2717.03	2704.294	2697.926	2695.803	2695.803	2712.785
40	1993.904	1994.612	1979.753	2002.395	1984.706	1999.565	2009.47	1996.027
45	1325.26	1337.288	1335.873	1339.411	1361.345	1408.044	1397.431	1404.507
50	710.3902	736.5699	748.5984	766.9951	753.5515	740.8154	738.6927	757.7968
55	215.0982	219.3436	199.5319	213.6831	206.6075	198.8244	219.3436	222.1738
60	11.32096	11.32096	12.02852	12.02852	12.02852	12.02852	12.73608	12.73608
65	6.36804	6.36804	6.36804	6.36804	6.36804	6.36804	7.0756	7.0756
70	2.83024	3.5378	3.5378	3.5378	3.5378	3.5378	3.5378	3.5378
75	1.41512	1.41512	1.41512	1.41512	1.41512	1.41512	1.41512	1.41512
80	0.70756	0.70756	0.70756	0.70756	0.70756	0.70756	0.70756	0.70756
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)

Intensity data(cd)

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$\gamma/C(^{\circ})$	280.0	285.0	290.0	295.0	300.0	305.0	310.0	315.0
0	7383.389	7389.049	7405.323	7403.201	7414.521	7413.106	7413.813	7415.229
5	7141.403	7190.225	7181.026	7135.035	7149.187	7213.574	7265.226	7287.16
10	6889.512	6920.645	6970.173	7026.778	6980.787	6953.9	6995.646	7041.637
15	6709.084	6687.857	6640.451	6660.262	6638.328	6662.385	6641.158	6651.063
20	5763.077	5722.746	5681.707	5736.189	5795.624	5773.689	5705.056	5694.443
25	4538.29	4535.459	4552.441	4589.942	4587.111	4586.404	4534.044	4532.629
30	3455.723	3488.979	3496.761	3496.761	3516.573	3501.007	3486.148	3474.827
35	2753.823	2770.097	2758.069	2788.494	2788.494	2781.418	2780.711	2780.711
40	2028.575	2061.83	2075.981	2108.529	2084.472	2086.594	2066.783	2087.302
45	1377.619	1405.214	1410.875	1417.243	1422.196	1394.601	1469.602	1425.734
50	742.938	747.1833	759.2119	757.7968	771.2404	764.1649	776.9009	792.4672
55	235.6175	228.5419	237.0326	227.8343	251.1838	258.2594	244.8158	251.1838
60	12.73608	13.44364	14.1512	14.1512	14.85876	15.56632	15.56632	16.27388
65	7.0756	7.78316	7.78316	7.78316	8.49072	8.49072	9.19828	9.19828
70	4.24536	4.24536	4.24536	4.24536	4.24536	4.95292	4.95292	4.95292
75	2.12268	2.12268	2.12268	2.12268	2.12268	2.12268	2.12268	2.83024
80	0.70756	0.70756	0.70756	0.70756	0.70756	0.70756	0.70756	0.70756
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
$\gamma/C(^{\circ})$	7418.766	7430.088	7421.597	7427.257	7422.304	7417.351	7419.474	7420.182
0	7258.858	7216.405	7126.544	7116.638	7137.158	7168.998	7166.875	7149.894
5	6951.777	6867.578	6817.341	6868.993	6883.144	6807.435	6784.085	6842.105
10	6658.847	6554.836	6469.221	6395.634	6477.004	6528.656	6554.836	6581.015
15	5743.972	5760.954	5688.075	5659.065	5707.887	5831.709	5891.145	5876.993
20	4573.668	4601.97	4579.329	4606.216	4680.509	4727.916	4751.266	4694.661
25	3510.913	3510.913	3550.536	3568.933	3607.141	3627.66	3615.632	3570.348
30	2803.353	2806.891	2816.089	2856.42	2864.91	2872.694	2863.495	2831.655
35	2083.057	2072.443	2104.991	2114.897	2115.604	2119.85	2097.915	2108.529
40	1417.243	1429.271	1418.658	1415.12	1413.705	1400.261	1431.394	1449.79
45	790.3445	815.8167	816.5243	848.3644	823.5999	808.7411	822.8923	813.694
50	254.014	257.5518	267.4577	260.3821	290.0996	283.7316	295.0525	302.1281
55	16.27388	16.27388	16.27388	16.27388	16.27388	16.27388	15.56632	15.56632
60	9.19828	9.90584	9.90584	9.90584	9.19828	9.19828	9.19828	8.49072
65	4.95292	5.66048	4.95292	5.66048	4.95292	4.95292	4.95292	4.95292
70	2.83024	2.83024	2.83024	2.83024	2.83024	2.83024	2.12268	2.12268
75	1.41512	0.70756	1.41512	1.41512	1.41512	1.41512	0.70756	0.70756
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	7410.983
5	7070.647
10	6933.38
15	6624.177
20	5851.521
25	4654.33
30	3553.366
35	2821.042
40	2111.359
45	1417.243
50	831.3829
55	304.9583
60	14.85876
65	8.49072
70	4.95292
75	2.12268
80	0.70756
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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