

# Test Report for Luminous Intensity Distributions

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

Date of Receipt : 2017 / 01 / 20

Test Date : 2017 / 01 / 20 ~ 2017 / 01 / 23

1. Issue Date for test report : 2017 / 04 / 07
  2. Report No : 17011702
  3. Total pages : 19
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- Remark : report No.17011702 is replaced by report No.17011702-1, as well as become invalid.

Approved Signatory:



## Test Report

### Information for test items

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

Trade Mark : CoolLED

Test item description : floodlight

Model : F2140C-001

Rated voltage(V) : 110~277

Rated frequency(Hz) : 50/60

Rated power(W) : 120

Trademark/model of LED chip : Lumileds / LUXEON 3030 2D

Trademark/model of driver : MEAN WELL / ELG-150-36A

Dimension for test item LxWxH (mm) : 402 × 295 × 60

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## Test Content

### Test Condition

Temperature (°C)	25.3
Humidity (% RH)	56.5
γ Axis measurement of angles	5°
C Axis measurement of angles	5°

### Electrical Test

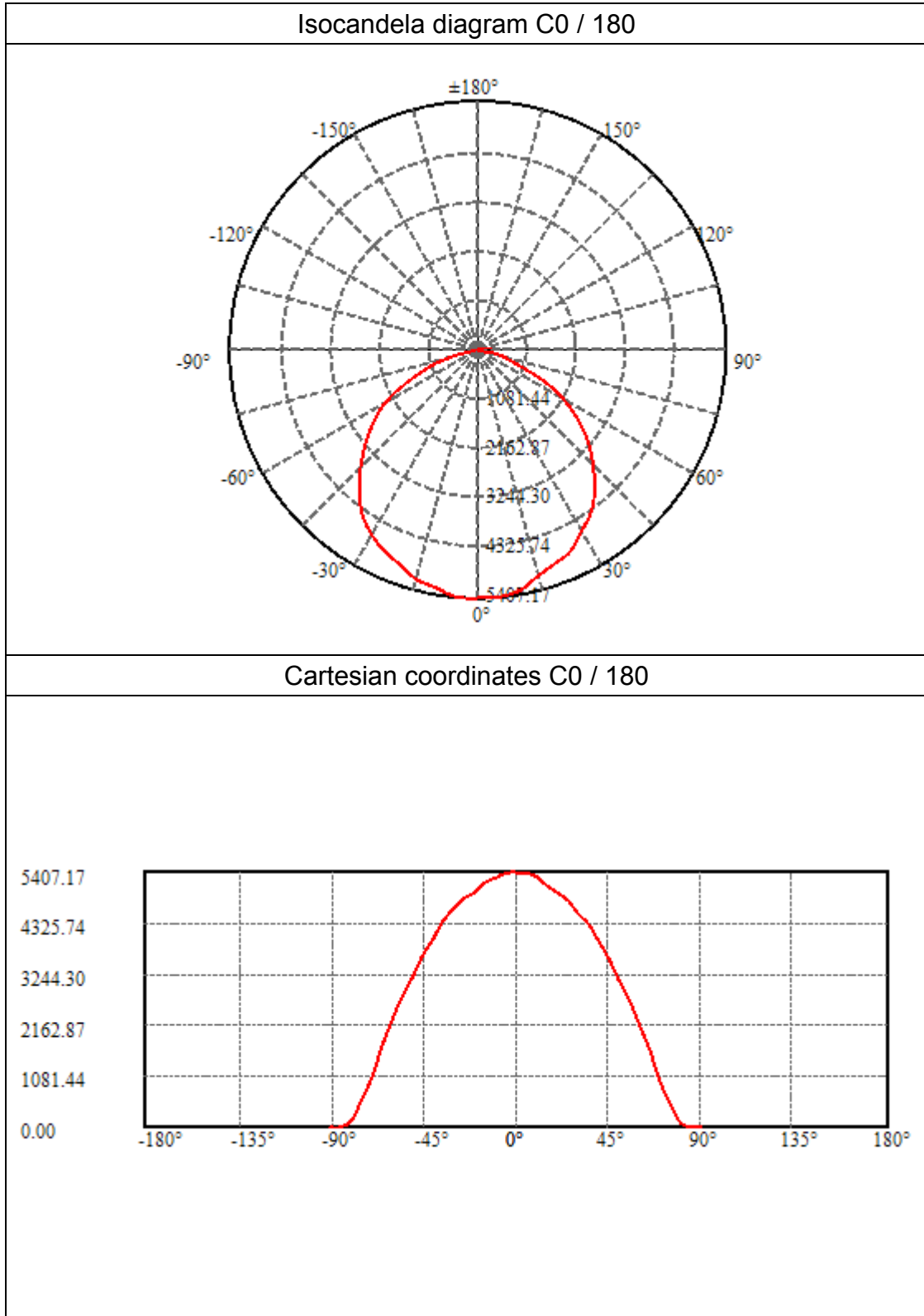
Test item	Test Result
Voltage(V)	220.0
Frequency(Hz)	60
Current (A)	0.549
Watt (W)	118.7
Power factor (PF)	0.983

### Luminosity Test

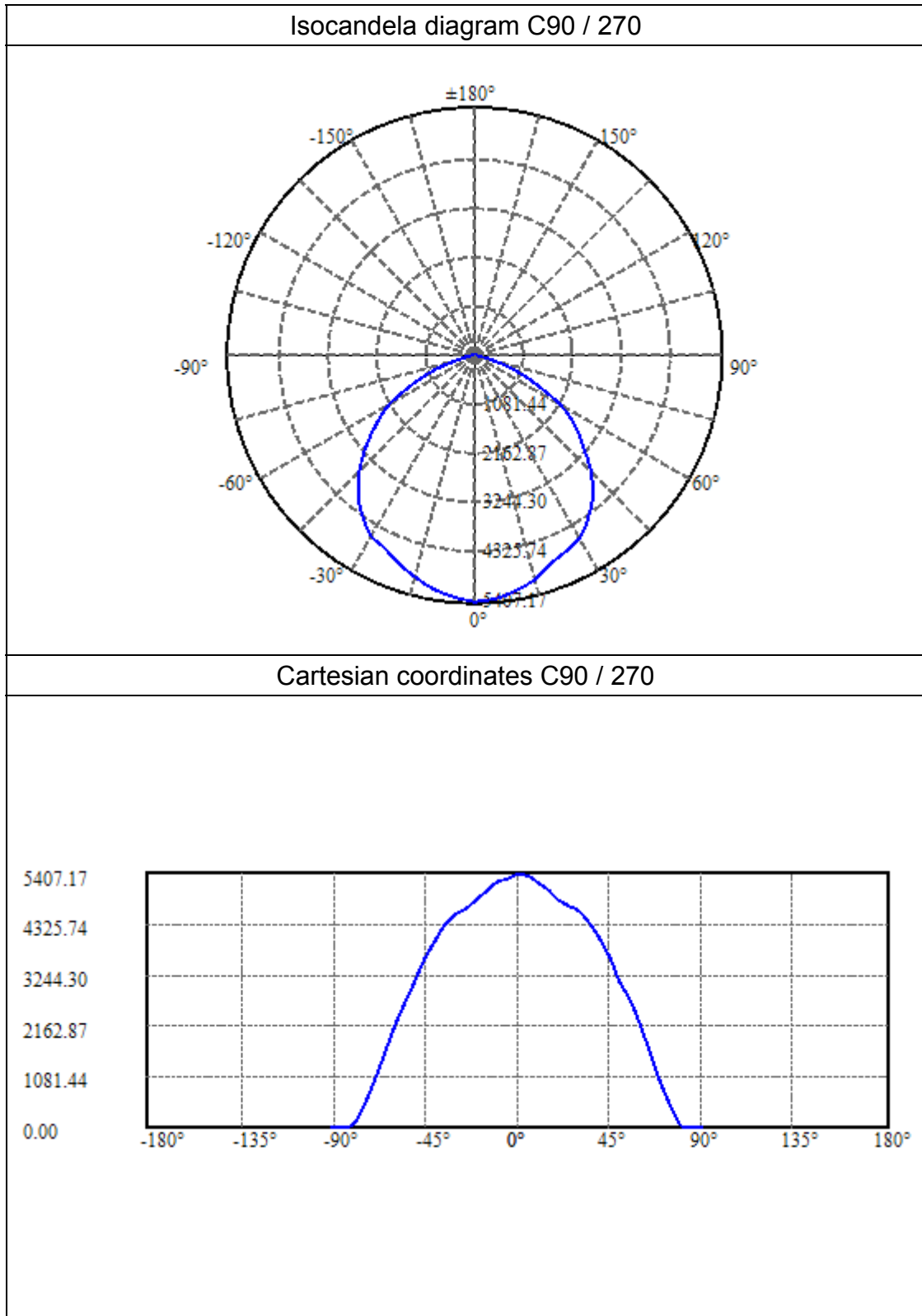
Test item	Test Result
Total luminous flux of luminaire (lm)	14156.8
Initial luminaire efficiency (lm/W)	119.3
Central intensity (cd)	5373.9
Max intensity (cd)	5407.2
Angle for max intensity (°)	C : 350.0      γ : 15.0
Color temperature(K)	5262
Rendering Index	83.8
Beam angle (50%Imax)	C0_180    Left=55.6    Right=54.7
	C90_270   Left=54.2    Right=54.9

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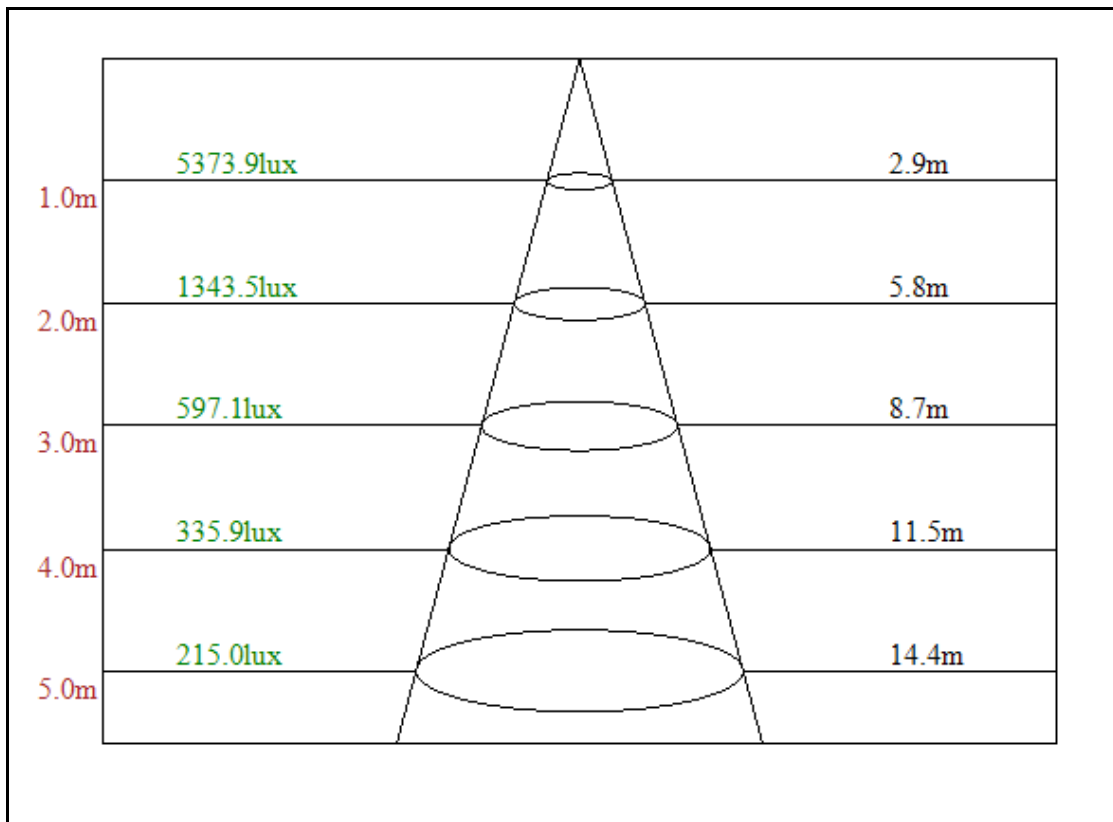
## Diagram for luminous intensity distribution I



## Diagram for luminous intensity distribution II



### Diagram for illumination distance



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### Photo for test items

Photo of product

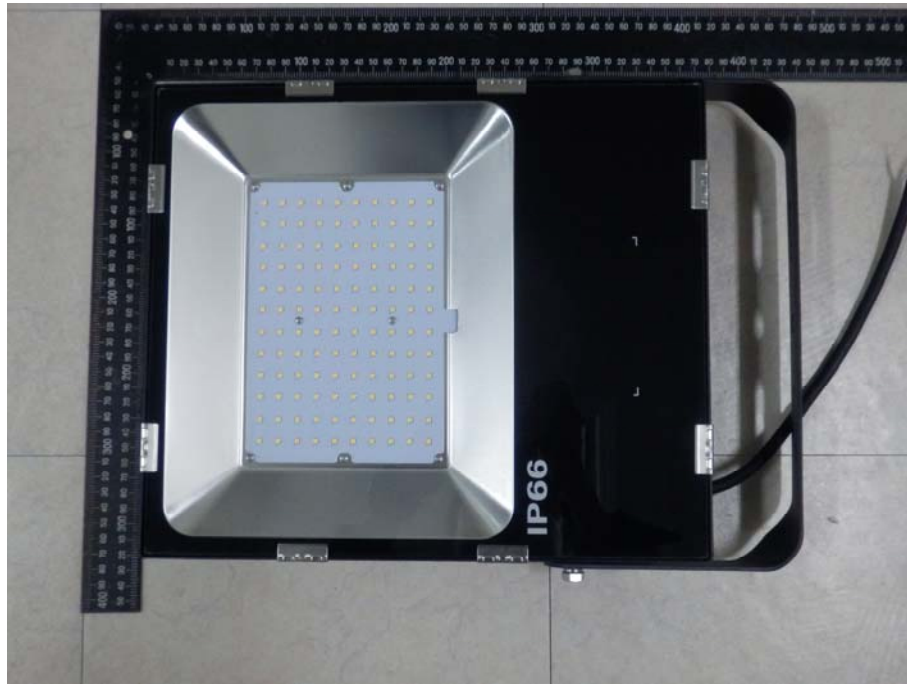
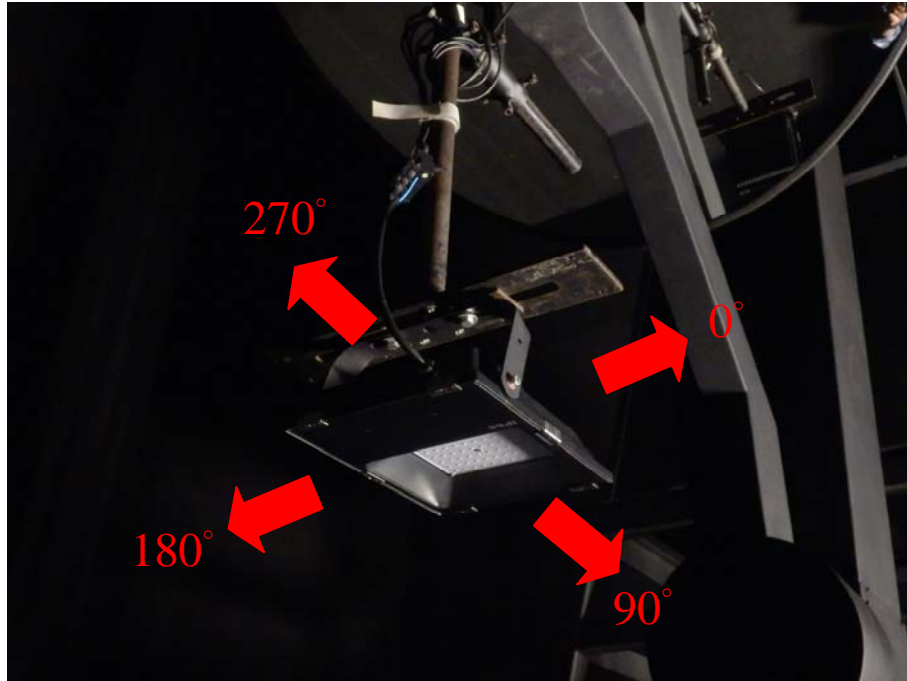


Photo of product



### Photo for test items

Direction for luminaire position in goniophotometer



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## 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	5373.918	5382.409	5382.409	5390.899	5370.38	5366.135	5364.72	5366.843
5	5382.409	5369.673	5366.843	5360.475	5334.295	5347.031	5358.352	5342.078
10	5307.408	5270.614	5283.351	5280.52	5273.445	5260.001	5243.02	5248.68
15	5107.875	5155.282	5139.716	5126.272	5120.612	5107.875	5103.63	5089.479
20	4965.656	4976.977	4962.826	4950.797	4944.429	4915.419	4899.853	4869.428
25	4814.946	4778.152	4764.709	4744.19	4711.642	4703.859	4643.009	4655.037
30	4547.488	4548.196	4550.318	4514.94	4475.317	4451.967	4434.279	4420.127
35	4299.135	4300.55	4272.248	4246.067	4228.378	4190.878	4202.906	4161.16
40	3957.383	3970.119	3946.77	3917.76	3910.684	3891.58	3877.429	3907.854
45	3576.008	3571.055	3558.319	3540.63	3537.8	3545.583	3544.876	3591.575
50	3139.444	3142.981	3126	3115.386	3121.047	3139.444	3181.19	3196.049
55	2673.162	2676.699	2664.671	2665.378	2668.209	2683.068	2712.077	2738.965
60	2167.256	2168.671	2186.36	2183.53	2199.804	2206.88	2218.201	2215.37
65	1603.331	1624.558	1638.709	1673.379	1684.7	1688.946	1681.162	1664.181
70	962.9891	965.8194	970.7723	1030.915	1057.802	1052.142	1044.359	1049.312
75	462.7442	464.8669	479.0181	486.0937	486.8013	484.6786	489.6315	483.2635
80	109.7426	110.2378	119.4361	115.5445	109.8133	113.6341	102.2424	103.1622
85	4.24536	4.174604	4.174604	4.174604	4.103848	3.962336	3.820824	3.750068
90	1.698144	1.839656	1.839656	1.839656	1.7689	1.839656	1.839656	1.839656

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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	5368.258	5354.814	5368.258	5361.182	5359.06	5358.352	5361.182	5365.428
5	5337.833	5335.71	5320.851	5335.71	5335.002	5340.663	5327.927	5327.219
10	5234.529	5225.331	5240.897	5220.377	5223.916	5209.764	5213.302	5221.085
15	5076.743	5060.469	5054.101	5056.224	5050.563	5054.101	5037.12	5045.61
20	4871.551	4865.183	4851.031	4862.353	4853.862	4844.664	4865.183	4886.41
25	4643.716	4628.857	4609.753	4641.594	4643.009	4664.943	4681.925	4693.953
30	4402.438	4405.976	4427.91	4424.373	4455.505	4483.1	4505.742	4524.139
35	4176.727	4181.68	4212.104	4224.133	4260.926	4279.323	4297.012	4327.437
40	3931.204	3954.553	3934.033	3984.27	3990.638	3994.884	4004.79	4003.375
45	3622.707	3643.934	3633.321	3649.594	3619.169	3603.603	3601.48	3594.405
50	3242.748	3231.427	3221.521	3219.398	3174.822	3147.227	3139.444	3117.51
55	2743.21	2739.672	2707.125	2717.738	2681.652	2671.747	2640.614	2632.123
60	2196.974	2191.313	2171.502	2178.577	2193.436	2185.653	2177.162	2171.502
65	1655.69	1657.105	1673.379	1666.304	1662.766	1627.388	1530.452	1515.594
70	1118.652	1076.906	1036.575	1032.33	1013.226	936.1019	936.1019	936.8094
75	452.8384	466.282	445.7628	459.2064	450.7157	411.0923	411.0923	401.1865
80	92.76112	89.22332	83.49208	75.77968	68.91634	62.33604	56.74631	52.07642
85	3.750068	3.5378	3.467044	3.396288	3.254776	3.18402	3.113264	3.113264
90	1.839656	1.7689	1.698144	1.698144	1.627388	1.556632	1.485876	1.41512

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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	5366.843	5354.106	5361.182	5356.229	5377.456	5360.475	5373.918	5379.579
5	5319.436	5310.238	5323.682	5331.464	5320.851	5334.295	5332.172	5328.634
10	5187.83	5211.887	5195.613	5214.01	5211.179	5210.472	5212.595	5238.066
15	5043.487	5037.12	5047.025	5042.072	5055.516	5048.441	5056.224	5047.025
20	4870.843	4855.277	4827.682	4875.796	4866.598	4875.088	4877.211	4872.966
25	4700.321	4704.566	4708.812	4718.01	4712.35	4699.614	4689	4677.679
30	4554.563	4566.592	4587.819	4571.545	4556.687	4541.828	4521.308	4498.667
35	4346.541	4351.494	4342.296	4358.569	4355.739	4345.126	4322.484	4311.163
40	4012.573	4014.695	4035.215	4024.601	4026.724	4028.139	4026.724	4045.121
45	3595.112	3588.037	3602.896	3595.112	3600.773	3612.801	3631.198	3654.547
50	3110.434	3097.698	3091.33	3112.557	3131.661	3149.35	3166.331	3194.633
55	2638.491	2629.293	2673.869	2646.274	2659.718	2668.916	2695.803	2729.767
60	2169.379	2170.794	2189.898	2181.407	2193.436	2203.342	2226.691	2235.89
65	1507.81	1517.716	1511.348	1524.792	1529.745	1547.434	1596.963	1705.927
70	930.4415	926.9036	924.7809	940.3472	955.9135	968.6496	977.1404	989.1689
75	402.6017	398.3563	399.7714	406.1394	416.0453	428.0738	440.1023	445.0552
80	39.19882	33.89212	33.96288	36.72236	43.30267	59.78882	61.69923	69.41164
85	3.042508	2.971752	3.042508	3.042508	3.042508	3.18402	3.254776	3.325532
90	1.485876	1.41512	1.41512	1.41512	1.485876	1.485876	1.485876	1.556632

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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	5372.503	5376.041	5380.994	5368.965	5374.626	5376.041	5392.314	5389.484
5	5345.616	5344.908	5344.908	5350.568	5359.06	5361.182	5356.937	5359.06
10	5229.576	5237.359	5241.604	5243.727	5263.539	5269.199	5294.671	5280.52
15	5068.252	5067.545	5062.592	5089.479	5089.479	5106.46	5102.923	5140.423
20	4869.428	4870.135	4904.806	4886.41	4909.051	4915.419	4942.307	4956.458
25	4659.99	4662.113	4647.254	4672.726	4688.292	4695.368	4740.652	4742.775
30	4478.147	4461.166	4447.015	4440.646	4460.458	4468.949	4478.147	4529.092
35	4280.03	4266.587	4259.511	4247.482	4242.53	4238.284	4248.898	4282.861
40	4040.875	4030.969	4021.063	4012.573	3997.007	3980.732	3989.931	3975.072
45	3687.095	3711.86	3739.455	3713.982	3698.416	3667.991	3655.962	3619.877
50	3250.531	3283.078	3317.749	3309.258	3307.843	3276.71	3234.257	3219.398
55	2756.654	2776.465	2821.042	2813.966	2824.58	2814.674	2799.815	2779.296
60	2247.211	2248.626	2257.116	2266.315	2284.004	2309.476	2310.183	2318.674
65	1727.861	1729.984	1734.937	1732.107	1751.919	1771.73	1798.618	1806.401
70	1076.906	1097.426	1109.454	1204.975	1175.965	1142.002	1151.2	1162.521
75	497.4147	476.8954	522.1793	504.4903	541.991	549.7741	575.2463	578.7841
80	80.44957	87.59593	95.94514	116.6059	123.9645	129.2005	142.5733	141.5828
85	3.396288	3.467044	3.679312	3.750068	3.820824	3.89158	4.033092	4.103848
90	1.627388	1.7689	1.698144	1.839656	1.839656	1.839656	1.839656	1.839656

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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	5390.899	5380.994	5378.164	5395.853	5401.513	5390.192	5385.947	5388.069
5	5362.597	5390.899	5376.749	5370.38	5385.947	5383.116	5373.918	5371.088
10	5301.04	5305.285	5305.285	5286.181	5260.708	5296.794	5287.596	5278.397
15	5148.914	5159.527	5175.801	5175.801	5176.509	5148.207	5145.376	5139.716
20	4981.222	4991.835	5002.449	5030.044	4969.194	4997.497	4986.883	4972.024
25	4779.568	4821.314	4826.974	4826.267	4841.833	4814.946	4808.578	4780.275
30	4544.658	4599.848	4627.442	4641.594	4644.424	4622.489	4597.018	4559.517
35	4306.917	4328.852	4359.277	4379.796	4369.891	4359.277	4333.805	4302.672
40	3987.101	4009.742	4030.262	4052.904	4004.79	4027.431	4008.327	3967.289
45	3612.801	3620.584	3643.227	3653.132	3622	3639.689	3613.509	3597.235
50	3191.096	3196.756	3200.294	3226.474	3205.954	3212.322	3189.68	3174.114
55	2756.654	2753.116	2745.333	2752.408	2755.946	2753.823	2743.21	2737.55
60	2304.523	2285.419	2292.494	2296.74	2288.957	2282.589	2277.636	2281.881
65	1804.986	1763.947	1751.919	1717.248	1694.606	1727.861	1746.966	1782.344
70	1151.2	1113.699	1071.953	1064.878	1054.972	1056.387	1086.105	1139.879
75	578.7841	569.5858	545.5287	528.5473	528.5473	543.4061	568.1707	573.8312
80	152.2669	157.7151	140.6629	146.1111	150.2858	150.8518	148.6584	156.0877
85	4.174604	4.174604	4.174604	4.24536	4.24536	4.24536	4.24536	4.24536
90	1.7689	1.7689	1.7689	1.7689	1.698144	1.7689	1.839656	1.839656

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### Data for luminous intensity (6)

Intensity data(cd)		Page: 6 Total:10							
$\gamma/C(^{\circ})$	200.0	205.0	210.0	215.0	220.0	225.0	230.0	235.0	
0	5357.645	5366.135	5378.871	5372.503	5365.428	5356.937	5377.456	5359.06	
5	5367.55	5351.984	5357.645	5340.663	5340.663	5343.493	5337.125	5340.663	
10	5281.936	5280.52	5245.143	5246.557	5235.236	5234.529	5228.161	5216.132	
15	5128.395	5103.63	5109.999	5089.479	5071.083	5061.884	5056.224	5044.903	
20	4955.75	4933.816	4892.777	4884.994	4869.428	4859.522	4853.154	4860.229	
25	4751.973	4708.812	4689	4657.16	4640.886	4628.857	4616.122	4625.32	
30	4507.865	4494.421	4465.411	4424.373	4410.929	4405.976	4430.033	4413.052	
35	4263.049	4234.747	4202.906	4197.246	4184.51	4191.585	4195.831	4219.888	
40	3946.062	3943.232	3926.958	3946.77	3953.845	3970.119	3940.401	3977.195	
45	3591.575	3595.82	3609.971	3642.519	3658.793	3669.406	3664.453	3650.302	
50	3190.388	3199.586	3215.153	3255.483	3285.201	3264.682	3239.21	3235.672	
55	2746.04	2771.512	2792.032	2799.815	2796.277	2776.465	2746.748	2741.087	
60	2291.787	2303.815	2299.57	2275.513	2259.947	2241.55	2209.002	2214.663	
65	1794.372	1794.372	1774.56	1744.135	1721.494	1712.295	1718.663	1708.05	
70	1165.351	1156.153	1139.172	1131.388	1199.314	1185.871	1088.935	1079.029	
75	575.9539	574.5387	599.3033	562.5102	549.7741	532.7927	525.717	493.8769	
80	152.4084	146.8187	138.894	134.2241	122.4079	112.8558	103.3745	97.99706	
85	4.174604	4.174604	4.174604	4.033092	3.89158	3.89158	3.750068	3.679312	
90	1.839656	1.839656	1.839656	1.839656	1.839656	1.7689	1.698144	1.698144	

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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	5370.38	5366.135	5357.645	5369.673	5361.182	5371.795	5359.767	5357.645
5	5332.172	5327.219	5322.974	5308.822	5324.389	5315.898	5289.011	5307.408
10	5210.472	5195.613	5200.566	5177.216	5197.028	5194.905	5192.075	5192.075
15	5046.318	5044.195	5039.243	5033.582	5024.383	5032.167	4999.619	5020.846
20	4841.833	4843.956	4844.664	4842.541	4860.229	4841.833	4848.909	4846.079
25	4633.103	4642.301	4659.283	4664.943	4674.141	4673.434	4645.839	4679.802
30	4434.279	4449.137	4471.071	4496.544	4509.28	4517.063	4520.601	4505.742
35	4224.133	4238.992	4265.879	4284.983	4297.012	4290.644	4292.059	4280.738
40	3971.534	3971.534	3973.657	3965.166	3980.025	3970.119	3974.365	3960.213
45	3619.877	3602.896	3569.64	3563.272	3561.149	3549.829	3573.886	3550.536
50	3186.85	3142.981	3130.245	3096.99	3080.716	3082.839	3087.084	3086.377
55	2702.172	2660.426	2639.199	2624.34	2614.434	2612.312	2598.16	2612.312
60	2205.465	2194.851	2175.747	2160.181	2150.275	2150.275	2131.878	2143.199
65	1703.097	1695.314	1632.341	1521.962	1504.98	1506.395	1474.555	1492.244
70	1076.906	984.216	958.0362	947.4229	941.0548	933.9792	927.6111	922.6583
75	495.292	466.9896	424.536	417.4604	413.9226	408.2621	404.0168	399.0638
80	81.22789	81.79393	64.24645	60.7794	57.10009	57.31236	56.74631	55.18968
85	3.5378	3.467044	3.467044	3.325532	3.254776	3.254776	3.254776	3.254776
90	1.698144	1.485876	1.556632	1.556632	1.485876	1.485876	1.41512	1.485876

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**Data for luminous intensity (8)**

Intensity data(cd)		Page: 8 Total:10						
$\gamma/C(^{\circ})$	280.0	285.0	290.0	295.0	300.0	305.0	310.0	315.0
0	5365.428	5367.55	5368.965	5370.38	5367.55	5369.673	5368.258	5374.626
5	5318.021	5310.238	5327.927	5318.021	5329.342	5327.927	5337.833	5336.417
10	5193.491	5209.764	5201.981	5204.812	5216.84	5209.057	5218.962	5228.868
15	5022.968	5034.289	5032.167	5031.459	5034.289	5045.61	5065.422	5051.271
20	4851.031	4853.154	4846.786	4839.71	4839.003	4845.371	4816.361	4839.003
25	4664.235	4646.546	4642.301	4640.886	4620.367	4626.027	4656.452	4623.197
30	4493.006	4473.194	4462.581	4430.033	4410.929	4391.117	4381.919	4384.75
35	4265.879	4255.266	4229.086	4218.473	4202.199	4177.434	4163.283	4142.764
40	3956.676	3946.77	3941.109	3946.062	3918.467	3896.533	3910.684	3884.504
45	3548.413	3551.244	3561.857	3564.687	3573.178	3579.546	3565.395	3579.546
50	3083.546	3091.33	3107.604	3115.386	3147.934	3174.822	3159.256	3174.822
55	2605.944	2615.849	2616.557	2647.69	2655.473	2678.115	2689.436	2693.681
60	2138.954	2146.03	2146.737	2146.03	2156.643	2152.397	2159.473	2159.473
65	1493.659	1522.669	1642.954	1651.445	1643.662	1638.001	1626.68	1636.586
70	925.4885	924.7809	924.0734	1025.254	1020.302	1021.009	1037.99	1102.378
75	401.8941	401.1865	400.4789	459.914	457.0838	442.225	474.7728	471.235
80	55.82648	57.31236	79.81277	75.00136	76.98253	87.24215	98.06782	100.9688
85	3.325532	3.396288	3.467044	3.467044	3.5378	3.679312	3.750068	3.820824
90	1.556632	1.485876	1.556632	1.627388	1.698144	1.698144	1.839656	1.839656

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### Data for luminous intensity (9)

Intensity data(cd)		Page: 9 Total:10						
$\gamma/C(^{\circ})$	320.0	325.0	330.0	335.0	340.0	345.0	350.0	355.0
0	5380.286	5368.965	5390.899	5387.362	5369.673	5386.654	5407.174	5395.853
5	5343.493	5351.984	5331.464	5364.72	5361.89	5346.324	5364.72	5399.39
10	5233.114	5238.774	5274.86	5260.001	5279.813	5279.105	5269.199	5274.152
15	5064.714	5085.233	5068.96	5107.168	5111.414	5140.423	5142.546	5109.291
20	4863.06	4872.258	4911.881	4909.051	4928.155	4947.967	4970.609	4987.59
25	4633.103	4645.839	4684.047	4703.859	4739.944	4746.313	4764.001	4793.012
30	4399.608	4411.637	4401.731	4454.798	4485.931	4524.846	4551.733	4572.252
35	4133.565	4149.132	4154.792	4200.784	4198.661	4258.096	4289.229	4304.087
40	3871.768	3876.014	3896.533	3883.797	3883.089	3925.543	3951.015	3970.827
45	3553.366	3545.583	3553.366	3525.064	3532.14	3538.508	3556.197	3569.64
50	3174.822	3154.302	3121.755	3110.434	3120.34	3124.585	3126.708	3133.076
55	2698.634	2695.803	2678.822	2668.209	2654.765	2659.718	2679.53	2683.775
60	2175.747	2194.851	2187.068	2186.36	2184.238	2172.209	2178.577	2176.455
65	1638.709	1654.983	1671.257	1670.549	1662.766	1658.521	1630.218	1623.143
70	1093.888	1035.868	1037.283	1044.359	1041.528	1021.009	977.1404	952.3757
75	486.8013	502.3676	507.3205	486.0937	486.0937	476.8954	477.603	471.235
80	99.62445	110.6624	115.1908	121.4173	126.9363	117.3842	114.6955	109.601
85	3.962336	3.962336	4.033092	4.174604	4.174604	4.24536	4.174604	4.174604
90	1.839656	1.910412	1.910412	1.839656	1.839656	1.839656	1.839656	1.839656

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## Data for luminous intensity (10)

Intensity data(cd)

$\gamma/C(^{\circ})$	Intensity (cd)
0	360.0
5	5373.918
10	5382.409
15	5307.408
20	5107.875
25	4965.656
30	4814.946
35	4547.488
40	4299.135
45	3957.383
50	3576.008
55	3139.444
60	2673.162
65	2167.256
70	1603.331
75	962.9891
80	462.7442
85	109.7426
90	4.24536
90	1.698144

Page: 10 Total:10

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### Equipment list and testing engineer for test

Item	Equipment No	Equipment	Manufacturer / Type / Series No
1	99A-01	Magnetic angle locator	Johnson
2	99E-06	Digital power meter	YOKOGAWA WT210 (91JB34563)
3	99E-08	Digital power meter	YOKOGAWA WT210 (91K539455)
4	99E-12	AC Power Source	APC AFC-500W
5	99E-17	AC Power Source	APC AFC-5kW
6	99O-01	Goniophotometer System	Sensing GMS-2000
7	99O-02	Spectroradiometer (2π)	Sensing SPR-3000
8	99O-23	Thermostatic Stabilized Photometric Sphere (2π)	Sensing
9	104O-30	Photometric standard lamp 110V/100W	Sensing (S13100250)
10	103T-13	Temperature and humidity records	TANDD(TR-72UI/F80417A2)
11	103T-14	Temperature and humidity records	TANDD(TR-72UI/F8043A00)
Testing engineers: JIAN YUN CHEN			

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