

Client:

LumCAT: CL-2R-12-3CCT

Luminaire: LED lamp

Report No:

Ballast type:

Test No: LCZP19080251

Voltage(V): 120.020

LampCAT:

Current(A): 0.127

Lamp flux(lm): 1462.7

Power (W): 15.000

Number of Lamps: 1

PF: 0.986

Length(mm): -280

Width(mm): -280

Phm Type: C

Height(mm): 70

Photometric Results

Lumens(lm): 1462.73, Efficiency(%): 100.00% , Luminous Efficacy(lm/W): 97.52

Central intensity(cd): 430.929, Maximum intensity(cd): 430.929

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=112.8

[C90/270]Total=112.8

Field angle(10%Imax): [C0/180]Total=186.2

[C90/270]Total=186.4

Maximum s/h(1/2): C0_180=1.25 C90_270=1.25

Maximum s/h(1/4): C0_180=1.37 C90_270=1.37

Up flux rate of lamp(%): 10.35%

Down flux rate of lamp(%): 89.65%

Up flux rate of LUM(%): 10.35%

Down flux rate of LUM(%): 89.65%

CIE Type : Semidirect lighting

Output flux ratio in π solid angle : 65.816%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	430.929	0.000	0	0.00%	0.00%
5.0	429.025	10.280	10.28	0.70%	0.70%
10.0	422.870	30.475	40.755	2.08%	2.79%
15.0	412.890	49.577	90.332	3.39%	6.18%
20.0	398.969	66.909	157.241	4.57%	10.75%
25.0	381.578	81.865	239.106	5.60%	16.35%
30.0	360.762	93.944	333.05	6.42%	22.77%
35.0	336.924	102.739	435.789	7.02%	29.79%
40.0	311.057	108.111	543.9	7.39%	37.18%
45.0	283.378	110.065	653.964	7.52%	44.71%
50.0	253.994	108.584	762.548	7.42%	52.13%
55.0	223.633	103.852	866.4	7.10%	59.23%
60.0	193.036	96.312	962.712	6.58%	65.82%
65.0	162.642	86.466	1049.178	5.91%	71.73%
70.0	133.441	74.970	1124.148	5.13%	76.85%
75.0	106.849	62.808	1186.956	4.29%	81.15%
80.0	84.800	51.280	1238.236	3.51%	84.65%
85.0	66.313	41.061	1279.297	2.81%	87.46%
90.0	50.707	32.041	1311.338	2.19%	89.65%
95.0	38.653	24.468	1335.806	1.67%	91.32%
100.0	31.249	18.994	1354.8	1.30%	92.62%
105.0	28.796	16.066	1370.866	1.10%	93.72%
110.0	28.012	14.849	1385.715	1.02%	94.73%
115.0	26.853	13.892	1399.608	0.95%	95.68%
120.0	25.349	12.691	1412.298	0.87%	96.55%
125.0	23.527	11.298	1423.596	0.77%	97.32%
130.0	21.539	9.799	1433.394	0.67%	97.99%
135.0	19.255	8.243	1441.637	0.56%	98.56%
140.0	16.806	6.677	1448.314	0.46%	99.01%
145.0	14.177	5.169	1453.484	0.35%	99.37%
150.0	11.187	3.735	1457.219	0.26%	99.62%
155.0	8.487	2.490	1459.708	0.17%	99.79%
160.0	6.038	1.523	1461.232	0.10%	99.90%
165.0	4.219	0.845	1462.077	0.06%	99.96%
170.0	2.974	0.427	1462.504	0.03%	99.98%
175.0	2.217	0.186	1462.69	0.01%	100.00%
180.0	1.485	0.044	1462.734	0.00%	100.00%

CL-2R-12-3CCT

Zonal flux distribution table

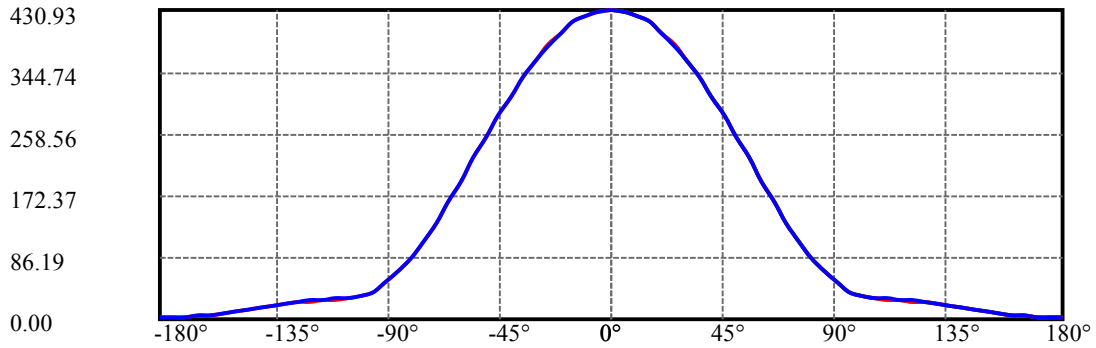
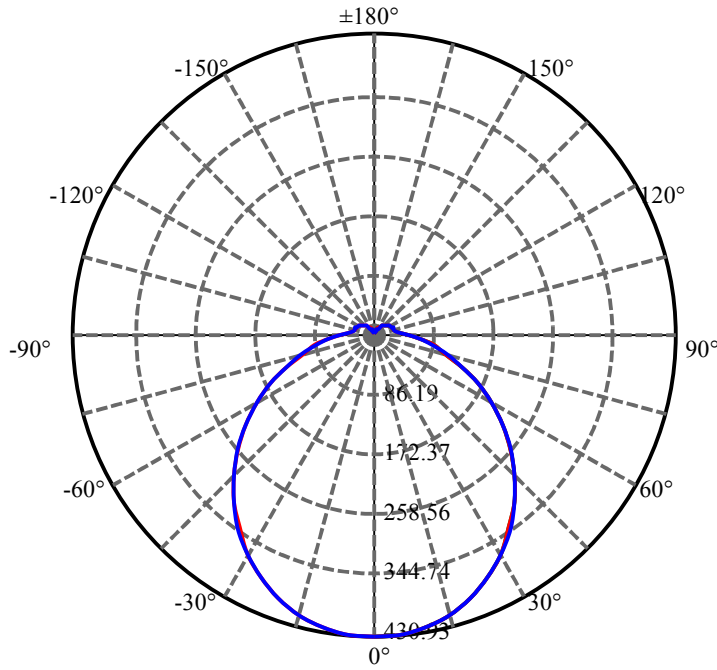
Appendix Page: 3 Total:12

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	333.05	22.77%	22.77%
0-40	543.90	37.18%	37.18%
0-60	962.71	65.82%	65.82%
0-90	1311.34	89.65%	89.65%
0-120	1412.30	96.55%	96.55%
0-180	1462.73	100.00%	100.00%
60-90	348.63	23.83%	23.83%
90-120	100.96	6.90%	6.90%
90-130	122.06	8.34%	8.34%
90-150	145.88	9.97%	9.97%
90-180	151.35	10.35%	10.35%
0-73.67	1170.19	80.00%	80.00%

ZONAL LUMEN SUMMARY

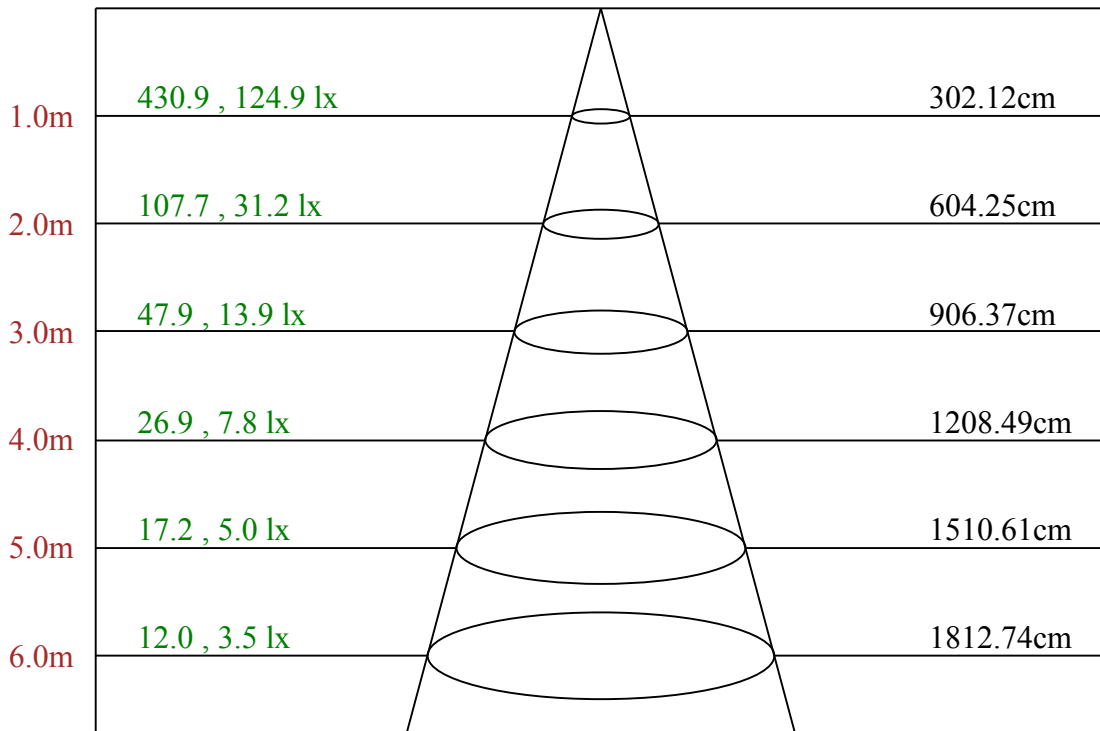
0-10	40.76
10-20	116.49
20-30	175.81
30-40	210.85
40-50	218.65
50-60	200.16
60-70	161.44
70-80	114.09
80-90	73.10
90-100	43.46
100-110	30.92
110-120	26.58
120-130	21.10
130-140	14.92
140-150	8.90
150-160	4.01
160-170	1.27
170-180	0.19



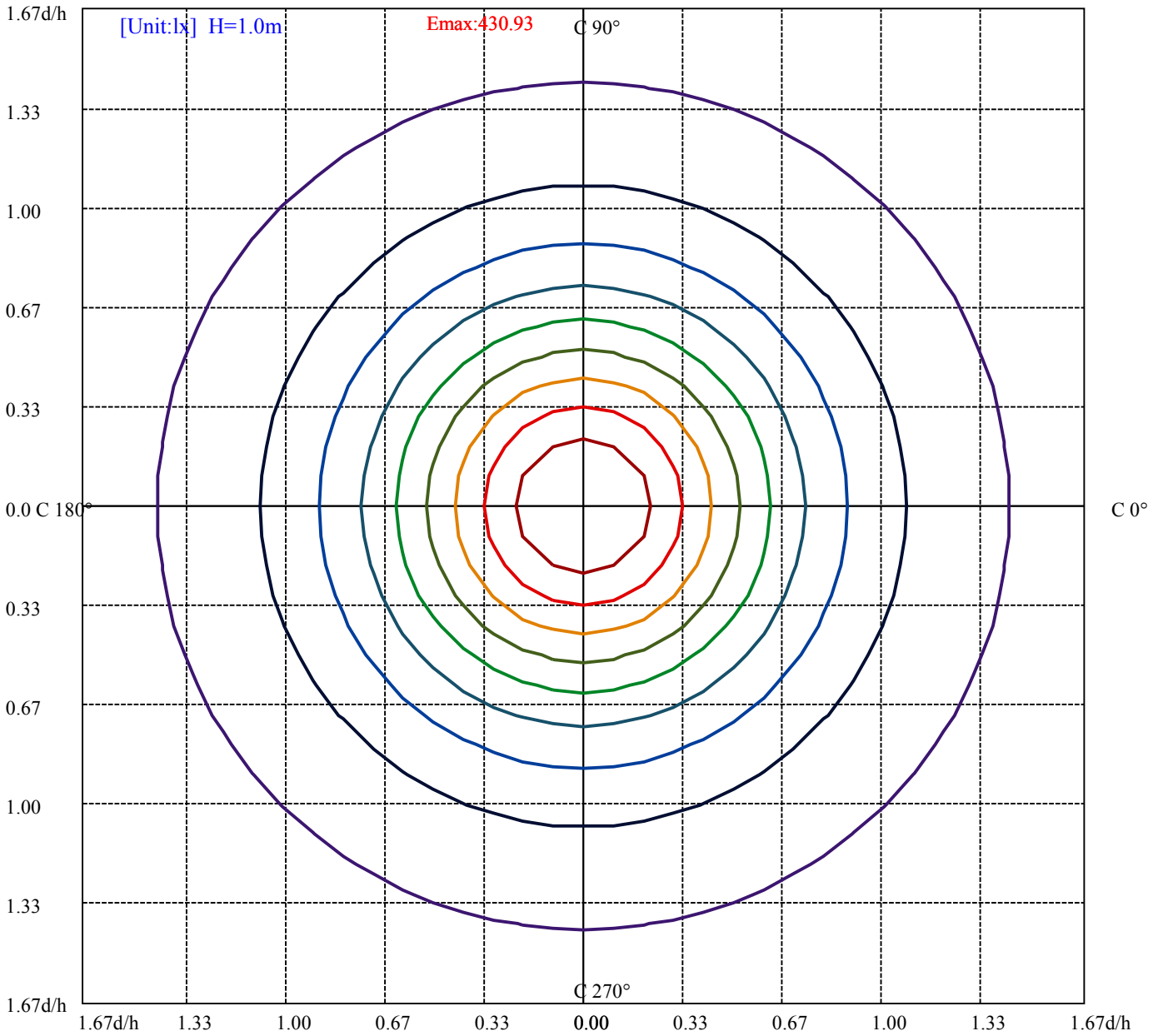
C0(Max): ———
C0/C180: ———
C90/C270: ———

Field angle(10%Imax):C0/180Left:93.1 Right:93.1
:C90/270Left:93.2 Right:93.2

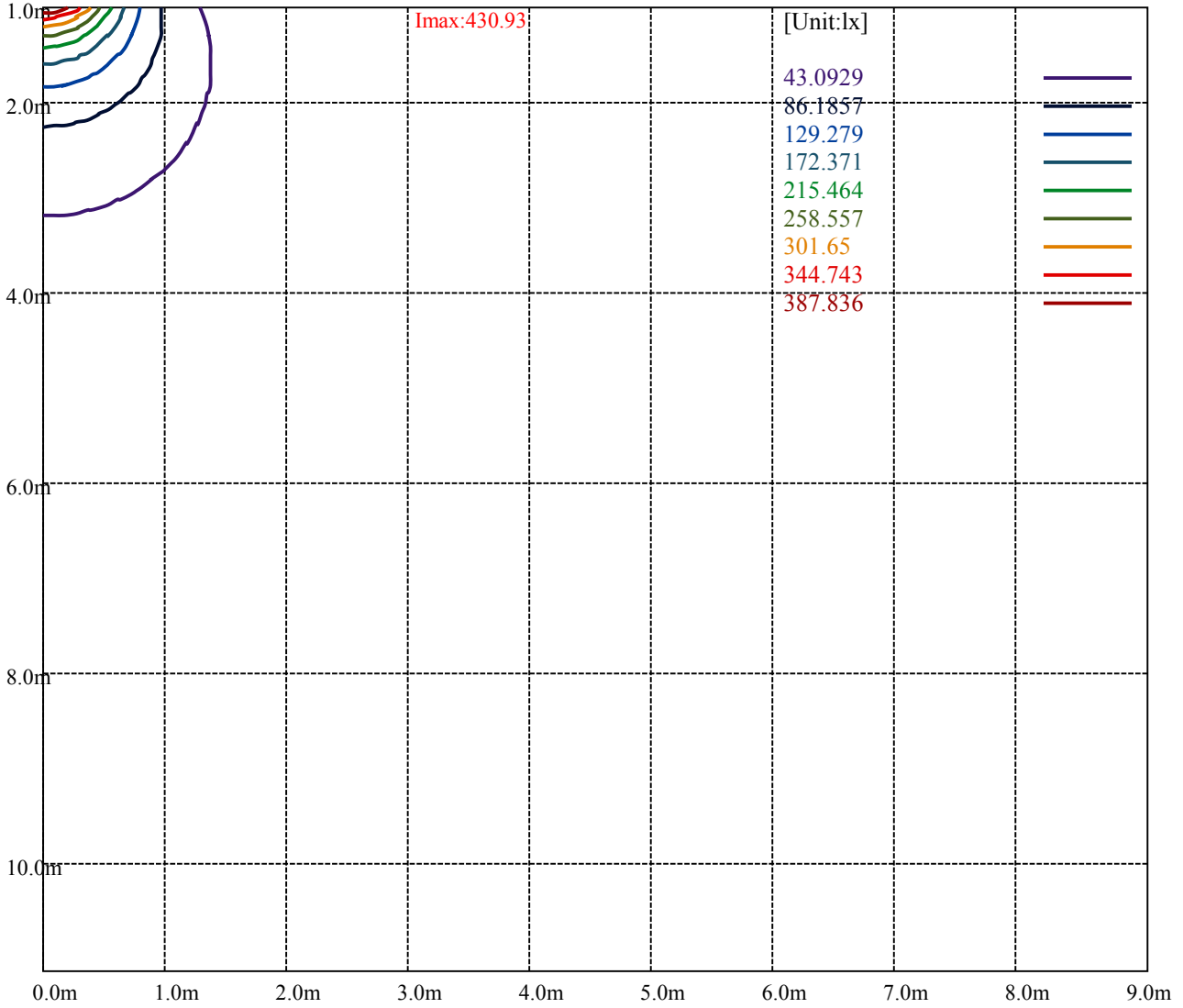
Beam Angle(50%Imax):C0/180Left:56.4 Right:56.4
:C90/270Left:56.4 Right:56.4



Max , Ave Beam angle of C0 plane 112.99



(10%Emax) 43.0929	—
(20%Emax) 86.1857	—
(30%Emax) 129.279	—
(40%Emax) 172.371	—
(50%Emax) 215.464	—
(60%Emax) 258.557	—
(70%Emax) 301.65	—
(80%Emax) 344.743	—
(90%Emax) 387.836	—



Luminance Table

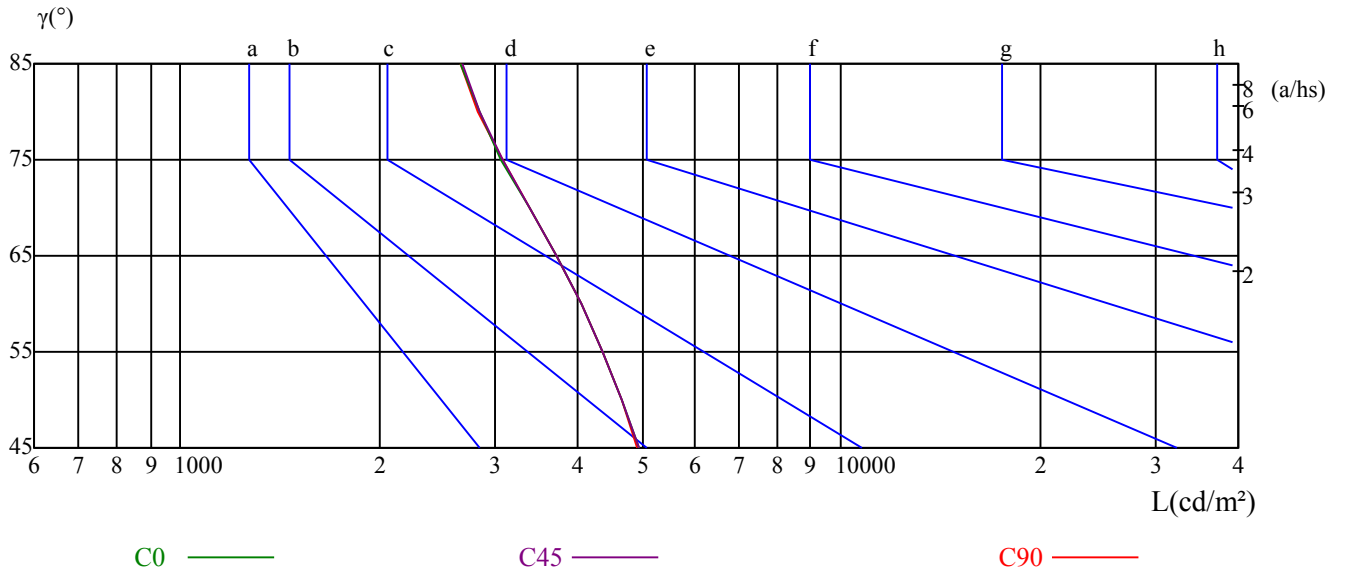
γ	45	50	55	60	65	70	75	80	85
C0	4941	4658	4355	4048	3715	3382	3055	2837	2658
C45	4942	4660	4359	4044	3716	3376	3070	2830	2668
C90	4922	4652	4361	4037	3711	3383	3078	2825	2652

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
6250	6244	6253	6684	6735	6716	12330	12301	12377

Glare Table

Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

Luminance Limiting Curve



RHOCC	80			70			50			30			10			0
RHOW	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR	COEFFICIENTS OF UTILIZATION RHOFC=20 CU															
0	1.17	1.17	1.17	1.13	1.13	1.13	1.05	1.05	1.05	0.99	0.99	0.99	0.93	0.93	0.93	0.90
1	1.00	0.95	0.90	0.96	0.92	0.88	0.90	0.86	0.83	0.84	0.81	0.79	0.79	0.77	0.75	0.72
2	0.86	0.79	0.73	0.83	0.77	0.71	0.78	0.73	0.68	0.73	0.69	0.65	0.69	0.65	0.62	0.59
3	0.75	0.67	0.60	0.73	0.65	0.59	0.68	0.62	0.56	0.64	0.59	0.54	0.60	0.56	0.52	0.49
4	0.67	0.57	0.51	0.64	0.56	0.50	0.61	0.53	0.48	0.57	0.51	0.46	0.54	0.49	0.44	0.42
5	0.59	0.50	0.43	0.58	0.49	0.43	0.54	0.47	0.41	0.51	0.45	0.40	0.48	0.43	0.38	0.36
6	0.53	0.44	0.38	0.52	0.43	0.37	0.49	0.42	0.36	0.46	0.40	0.35	0.44	0.38	0.34	0.31
7	0.48	0.39	0.33	0.47	0.39	0.33	0.44	0.37	0.32	0.42	0.36	0.31	0.40	0.34	0.30	0.28
8	0.44	0.35	0.30	0.43	0.35	0.29	0.41	0.33	0.28	0.39	0.32	0.28	0.37	0.31	0.27	0.25
9	0.40	0.32	0.26	0.39	0.31	0.26	0.37	0.30	0.25	0.36	0.29	0.25	0.34	0.28	0.24	0.22
10	0.37	0.29	0.24	0.36	0.29	0.24	0.35	0.28	0.23	0.33	0.27	0.23	0.31	0.26	0.22	0.20

CL-2R-12-3CCT

Appendix Page: 10 Total:12

Intensity data(cd)

C/ γ (°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0
0.0	430.93	431.29	426.59	416.48	402.21	385.95	364.81	339.61	314.59
15.0	430.93	430.84	424.79	416.31	404.59	387.36	368.32	344.69	319.88
30.0	430.93	430.84	424.79	415.76	402.13	386.79	365.49	342.47	316.56
45.0	430.93	430.57	424.25	413.70	400.70	382.75	361.27	339.26	313.99
60.0	430.93	429.04	420.93	411.29	397.68	379.57	358.76	334.80	309.48
75.0	430.93	426.17	419.61	408.73	394.17	377.91	355.53	331.17	305.83
90.0	430.93	427.96	421.48	410.14	393.58	375.31	355.78	330.58	303.67
105.0	430.93	426.79	419.06	408.37	392.73	375.38	352.81	328.37	303.20
120.0	430.93	428.77	421.29	409.75	394.34	375.96	354.33	329.19	302.61
135.0	430.93	426.70	421.12	409.16	395.21	374.52	353.47	328.19	303.45
150.0	430.93	428.32	420.96	409.29	393.30	375.35	354.51	330.99	303.96
165.0	430.93	427.61	419.62	409.93	394.13	376.98	355.08	330.49	304.55
180.0	430.93	427.26	421.16	411.49	396.08	378.25	357.20	333.72	307.65
195.0	430.93	426.33	419.92	408.74	394.21	375.99	353.08	329.44	302.83
210.0	430.93	427.41	421.18	411.79	396.81	379.57	357.63	332.63	305.64
225.0	430.93	428.85	423.71	412.52	398.72	380.58	360.01	335.20	309.57
240.0	430.93	430.48	422.46	414.71	401.20	383.00	361.19	338.31	312.54
255.0	430.93	428.59	423.56	414.48	401.81	384.02	363.44	340.61	314.01
270.0	430.93	430.84	425.44	417.70	404.29	386.65	367.84	344.89	317.53
285.0	430.93	430.12	425.72	414.93	403.78	387.96	368.73	344.64	317.94
300.0	430.93	431.92	426.42	416.51	405.16	388.94	369.20	346.13	321.62
315.0	430.93	430.21	425.80	416.53	404.03	388.11	368.58	345.64	320.27
330.0	430.93	429.40	424.55	415.66	402.64	386.21	367.26	344.10	318.50
345.0	430.93	430.30	424.47	415.40	401.76	384.79	363.97	341.08	315.50
360.0	430.93	431.29	426.59	416.48	402.21	385.95	364.81	339.61	314.59
C/ γ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	288.31	259.41	227.97	197.08	166.19	137.29	109.38	87.52	67.92
15.0	292.82	264.31	234.45	204.41	173.56	143.61	114.39	91.20	71.63
30.0	290.20	261.50	230.45	199.58	171.14	139.91	111.93	89.00	69.78
45.0	286.92	257.87	227.10	196.07	165.48	135.97	109.45	86.08	67.94
60.0	282.90	253.26	222.72	191.99	162.35	132.26	105.68	84.33	65.95
75.0	279.14	249.75	219.01	188.19	158.26	129.14	102.63	82.50	64.62
90.0	276.22	246.60	217.44	186.12	155.88	126.18	101.97	80.64	63.09
105.0	274.34	244.05	214.84	184.27	153.62	124.50	99.06	79.28	61.39
120.0	274.49	245.47	213.75	181.58	152.02	123.82	99.31	78.67	61.55
135.0	274.48	244.34	214.47	182.81	152.40	123.88	99.95	78.81	61.90
150.0	273.88	245.14	214.61	183.36	153.37	125.00	101.02	79.74	62.68
165.0	278.70	247.28	216.32	186.61	156.09	127.55	102.23	80.78	63.73
180.0	278.89	249.15	219.50	189.57	159.11	129.73	103.66	82.69	64.42
195.0	273.51	242.39	212.62	182.67	152.00	124.58	98.96	78.66	61.52
210.0	276.94	247.78	217.09	186.67	156.79	127.73	101.64	81.15	63.28
225.0	280.52	250.92	220.25	190.29	160.34	131.01	104.94	83.19	64.60
240.0	284.25	254.61	224.52	194.25	163.97	134.51	107.48	85.23	66.67
255.0	288.30	257.30	227.46	197.98	166.53	136.96	109.91	87.53	68.30
270.0	288.82	261.37	230.67	199.53	169.11	140.94	112.68	88.83	68.94
285.0	292.41	263.29	232.54	201.17	170.79	142.02	114.16	89.71	71.37
300.0	292.69	264.49	234.75	203.93	172.39	143.82	115.62	91.20	70.83
315.0	292.83	264.40	234.00	203.41	172.64	142.32	113.80	91.49	71.25
330.0	290.67	261.93	231.40	201.32	170.79	141.70	113.23	89.44	69.86
345.0	288.84	259.22	229.24	199.98	168.57	138.14	111.30	87.51	68.31
360.0	288.31	259.41	227.97	197.08	166.19	137.29	109.38	87.52	67.92

CL-2R-12-3CCT

Intensity data(cd)

C/γ(°)	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0
0.0	52.12	39.38	31.16	27.73	27.19	26.10	24.75	22.94	21.14
15.0	55.03	41.95	32.48	28.15	27.15	26.25	25.26	23.54	21.65
30.0	54.16	40.71	32.32	28.34	27.62	26.72	25.45	23.74	21.75
45.0	52.33	40.15	31.94	28.78	27.97	26.98	25.71	24.09	22.02
60.0	50.63	38.65	31.17	28.83	27.93	26.85	25.59	23.88	22.07
75.0	49.61	37.75	31.27	29.75	28.67	27.59	26.06	24.27	22.20
90.0	48.06	37.08	30.87	29.97	28.98	27.81	26.10	24.39	22.23
105.0	46.56	36.32	30.65	29.93	29.12	27.69	26.16	24.18	22.38
120.0	46.23	35.87	30.73	30.19	29.20	27.85	26.31	24.51	22.53
135.0	46.69	36.08	30.95	30.23	29.06	27.71	26.09	24.29	22.31
150.0	47.23	36.19	30.89	29.99	29.00	27.57	26.04	24.07	22.00
165.0	48.29	36.80	30.79	29.98	28.99	27.56	25.85	23.88	21.81
180.0	48.92	37.54	30.46	29.03	28.31	26.97	25.26	23.56	21.50
195.0	46.73	35.90	30.40	29.59	28.60	27.15	25.08	22.91	20.84
210.0	47.84	37.10	30.51	29.16	28.43	27.08	25.09	22.84	20.67
225.0	49.44	37.44	30.41	28.78	27.97	26.80	24.81	22.83	20.75
240.0	50.90	38.20	30.54	28.47	27.75	26.49	24.78	22.79	20.63
255.0	52.21	39.81	31.27	28.13	27.68	26.42	24.89	22.92	20.94
270.0	53.46	40.32	31.68	28.26	27.63	26.46	25.02	23.13	21.15
285.0	54.47	40.90	31.82	27.78	27.24	26.34	24.81	23.19	21.21
300.0	54.16	41.27	31.90	27.39	26.94	25.95	24.60	22.98	21.27
315.0	55.24	41.29	32.39	27.71	27.08	26.27	25.10	23.30	21.41
330.0	53.88	41.04	31.97	27.57	26.94	25.95	24.78	23.35	21.37
345.0	52.78	39.94	31.42	27.38	26.84	25.94	24.77	23.07	21.09
360.0	52.12	39.38	31.16	27.73	27.19	26.10	24.75	22.94	21.14

C/γ(°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	19.15	16.53	14.54	11.20	8.31	5.78	3.88	2.62	2.08
15.0	19.67	17.41	15.25	11.91	9.20	6.59	4.51	3.25	2.35
30.0	19.77	17.42	14.80	12.01	9.30	6.68	4.78	3.52	2.26
45.0	20.03	17.59	14.89	12.00	9.29	6.77	4.78	3.43	2.26
60.0	20.00	17.75	15.05	12.07	9.37	6.58	4.59	3.24	2.25
75.0	19.95	17.79	14.92	11.86	9.26	6.29	4.31	3.15	2.34
90.0	19.80	17.73	15.03	11.70	8.82	6.21	4.41	3.06	2.34
105.0	19.87	17.80	15.73	11.87	8.99	6.29	4.31	2.97	2.25
120.0	20.19	17.93	14.96	12.08	9.73	6.67	4.51	2.97	2.52
135.0	20.06	17.54	14.66	11.79	8.91	6.75	4.32	2.79	2.43
150.0	19.58	17.60	14.37	12.57	8.89	6.64	4.58	2.78	2.33
165.0	19.39	16.87	14.54	11.49	8.44	6.37	4.40	2.87	2.24
180.0	19.35	16.57	13.80	11.02	8.33	5.91	4.39	3.23	2.33
195.0	18.22	15.52	12.63	9.47	7.04	4.96	3.79	2.89	2.17
210.0	18.23	15.44	12.82	9.57	6.95	5.05	3.88	3.07	2.26
225.0	18.23	15.52	12.54	9.47	7.22	5.14	3.88	3.16	2.17
240.0	18.29	15.59	12.52	9.55	7.30	5.23	3.96	3.15	2.16
255.0	18.60	15.64	12.67	10.07	7.46	5.30	3.86	3.06	2.16
270.0	18.81	16.02	13.68	10.35	7.56	5.49	4.05	3.06	2.07
285.0	18.97	16.36	14.29	11.33	8.00	5.66	3.96	2.79	2.07
300.0	19.10	16.58	13.97	10.99	8.74	6.04	3.97	2.70	2.07
315.0	18.98	16.73	14.12	11.43	8.73	6.21	4.14	2.61	1.98
330.0	19.04	16.70	14.19	11.49	8.98	6.20	3.95	2.51	2.07
345.0	18.85	16.70	14.27	11.22	8.89	6.10	4.04	2.51	2.06
360.0	19.15	16.53	14.54	11.20	8.31	5.78	3.88	2.62	2.08

Intensity data(cd)

C/γ(°)	180.0
0.0	1.45
15.0	1.53
30.0	1.53
45.0	1.53
60.0	1.44
75.0	1.53
90.0	1.44
105.0	1.44
120.0	1.53
135.0	1.53
150.0	1.44
165.0	1.44
180.0	1.43
195.0	1.53
210.0	1.53
225.0	1.53
240.0	1.44
255.0	1.53
270.0	1.44
285.0	1.44
300.0	1.53
315.0	1.53
330.0	1.44
345.0	1.44
360.0	1.45