
Light Blue USA-Rayhil

Client:

LumCAT: LCD-RD-9-5CCT-UNV-120-**

Luminaire: LED lamp

Report No:

Ballast type:

Test No: LCZP24120175

Voltage(V): 120.030

LampCAT:

Current(A): 0.110

Lamp flux(lm): 987.3

Power (W): 12.930

Number of Lamps: 1

PF: 0.978

Length(mm): -60

Width(mm): -60

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 987.33, Efficiency(%): 100.00% , Luminous Efficacy(lm/W): 76.36

Central intensity(cd): 1496.177, Maximum intensity(cd): 1496.177

Angle of maximum intensity: C=90.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=43.0

[C90/270]Total=42.4

Field angle(10%Imax): [C0/180]Total=75.6

[C90/270]Total=75.2

Maximum s/h(1/2): C0_180=0.69 C90_270=0.68

Maximum s/h(1/4): C0_180=0.69 C90_270=0.68

Up flux rate of lamp(%): 0.27%

Down flux rate of lamp(%): 99.73%

Up flux rate of LUM(%): 0.27%

Down flux rate of LUM(%): 99.73%

CIE Type : Direct lighting

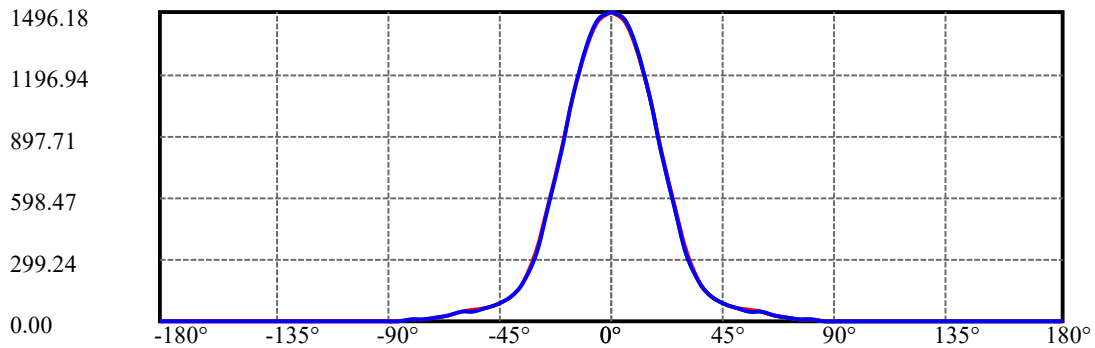
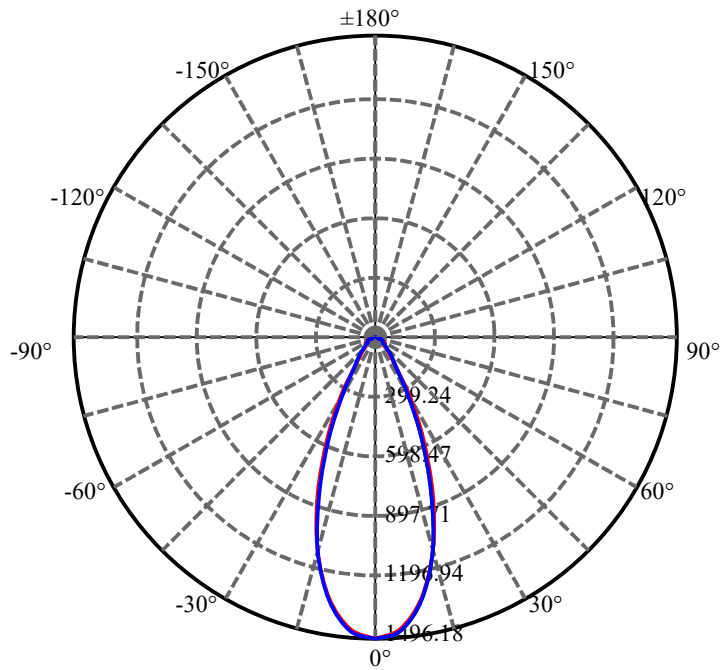
Output flux ratio in π solid angle : 94.606%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	1496.177	0.000	0	0.00%	0.00%
5.0	1455.067	35.281	35.281	3.57%	3.57%
10.0	1321.114	99.313	134.594	10.06%	13.63%
15.0	1089.690	143.007	277.601	14.48%	28.12%
20.0	820.431	157.421	435.022	15.94%	44.06%
25.0	550.041	143.737	578.759	14.56%	58.62%
30.0	334.172	111.898	690.657	11.33%	69.95%
35.0	185.297	76.495	767.153	7.75%	77.70%
40.0	119.789	50.901	818.054	5.16%	82.86%
45.0	85.206	37.956	856.01	3.84%	86.70%
50.0	65.297	30.411	886.421	3.08%	89.78%
55.0	52.363	25.583	912.005	2.59%	92.37%
60.0	43.092	22.064	934.069	2.23%	94.61%
65.0	31.593	18.156	952.225	1.84%	96.44%
70.0	20.496	13.189	965.414	1.34%	97.78%
75.0	13.640	8.923	974.337	0.90%	98.68%
80.0	8.999	6.058	980.395	0.61%	99.30%
85.0	3.345	3.354	983.749	0.34%	99.64%
90.0	0.050	0.929	984.678	0.09%	99.73%
95.0	0.000	0.014	984.692	0.00%	99.73%
100.0	0.000	0.000	984.692	0.00%	99.73%
105.0	0.000	0.000	984.692	0.00%	99.73%
110.0	0.000	0.000	984.692	0.00%	99.73%
115.0	0.000	0.000	984.692	0.00%	99.73%
120.0	0.000	0.000	984.692	0.00%	99.73%
125.0	0.000	0.000	984.692	0.00%	99.73%
130.0	0.000	0.000	984.692	0.00%	99.73%
135.0	0.000	0.000	984.692	0.00%	99.73%
140.0	0.096	0.018	984.71	0.00%	99.73%
145.0	0.460	0.093	984.802	0.01%	99.74%
150.0	1.089	0.228	985.03	0.02%	99.77%
155.0	2.028	0.394	985.425	0.04%	99.81%
160.0	2.944	0.521	985.946	0.05%	99.86%
165.0	3.714	0.549	986.495	0.06%	99.92%
170.0	4.033	0.460	986.954	0.05%	99.96%
175.0	4.217	0.295	987.25	0.03%	99.99%
180.0	2.189	0.077	987.326	0.01%	100.00%

ZONAL LUMEN SUMMARY			
Zone	Lumens	%Lamp	%Fixt
0-30	690.66	69.95%	69.95%
0-40	818.05	82.86%	82.86%
0-60	934.07	94.61%	94.61%
0-90	984.68	99.73%	99.73%
0-120	984.69	99.73%	99.73%
0-180	987.33	100.00%	100.00%
60-90	50.61	5.13%	5.13%
90-120	0.01	0.00%	0.00%
90-130	0.01	0.00%	0.00%
90-150	0.35	0.04%	0.04%
90-180	2.57	0.26%	0.26%
0-37.23	789.86	80.00%	80.00%

ZONAL LUMEN SUMMARY

0-10	134.59
10-20	300.43
20-30	255.64
30-40	127.40
40-50	68.37
50-60	47.65
60-70	31.35
70-80	14.98
80-90	4.28
90-100	0.01
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.02
140-150	0.32
150-160	0.92
160-170	1.01
170-180	0.30



C90(Max): —————

C0/C180: —————

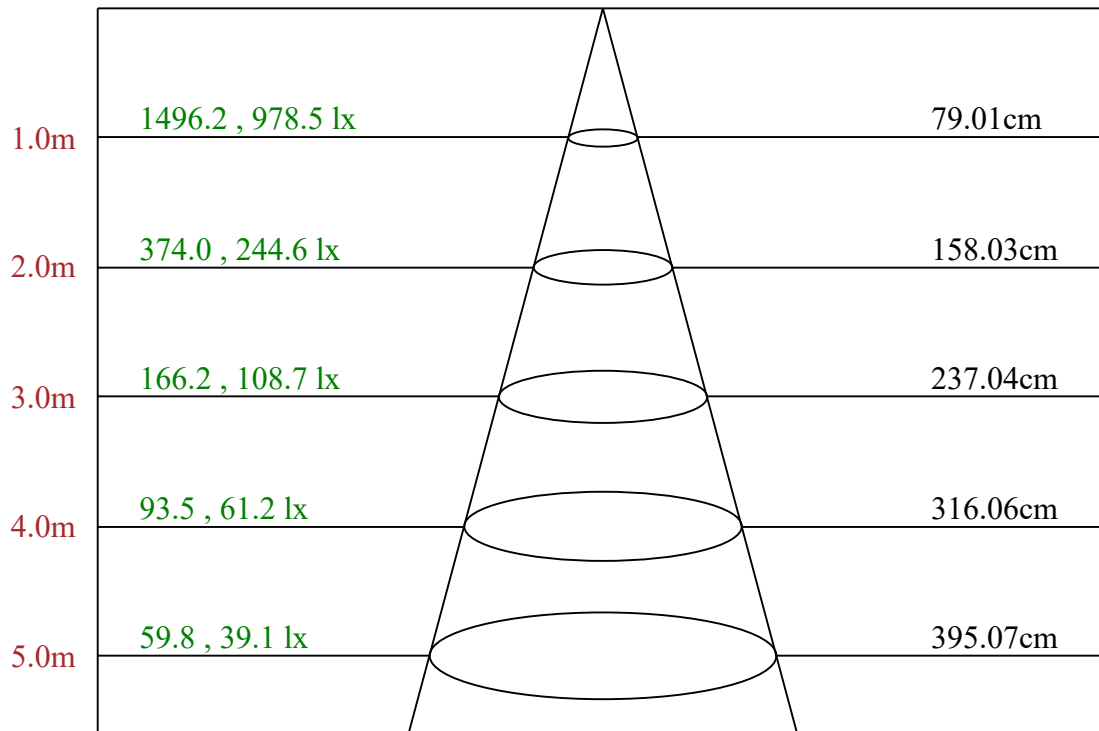
C90/C270: —————

Field angle(10%Imax):C0/180Left:37.8 Right:37.8

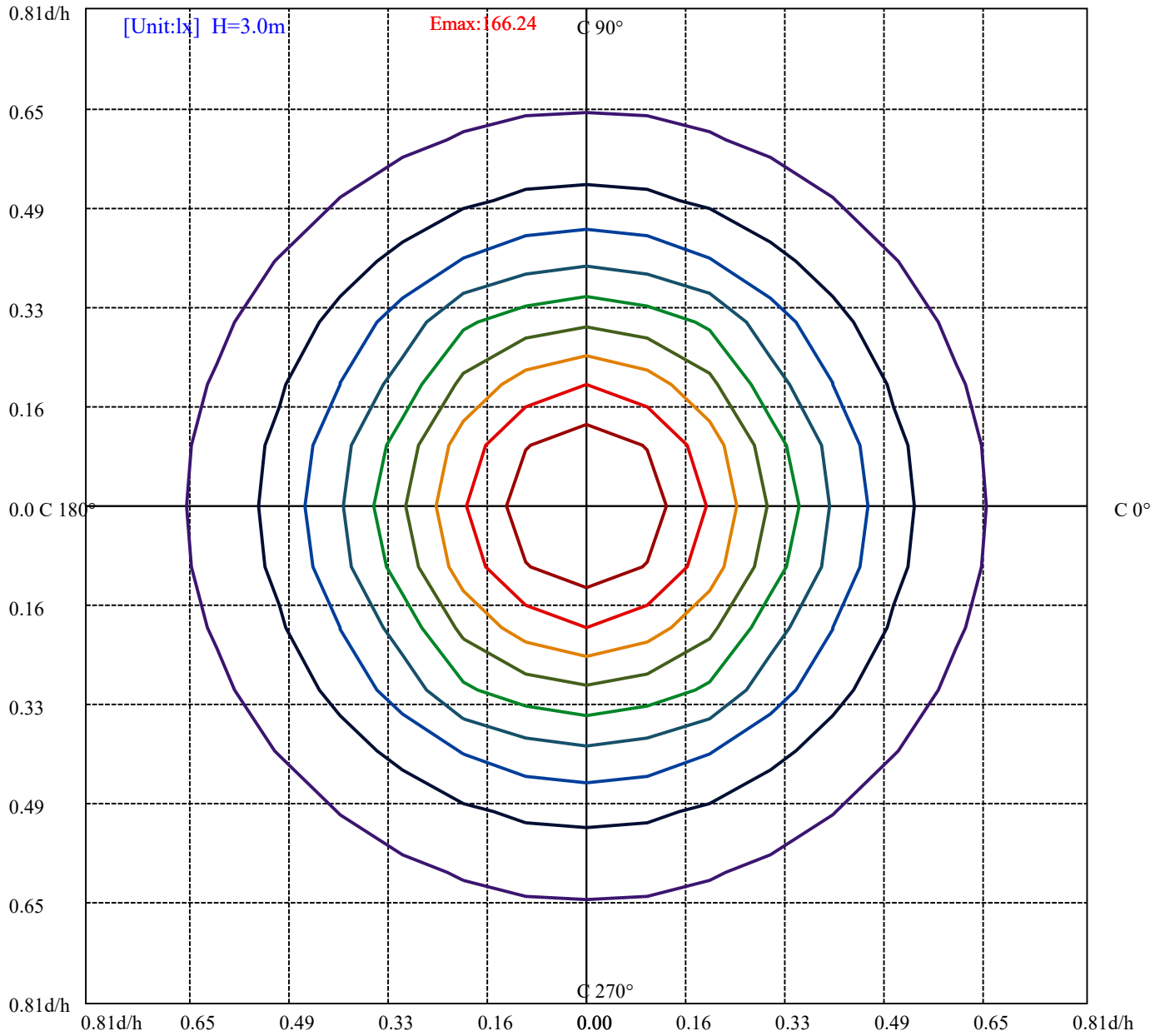
:C90/270Left:37.6 Right:37.6

Beam Angle(50%Imax):C0/180Left:21.5 Right:21.5

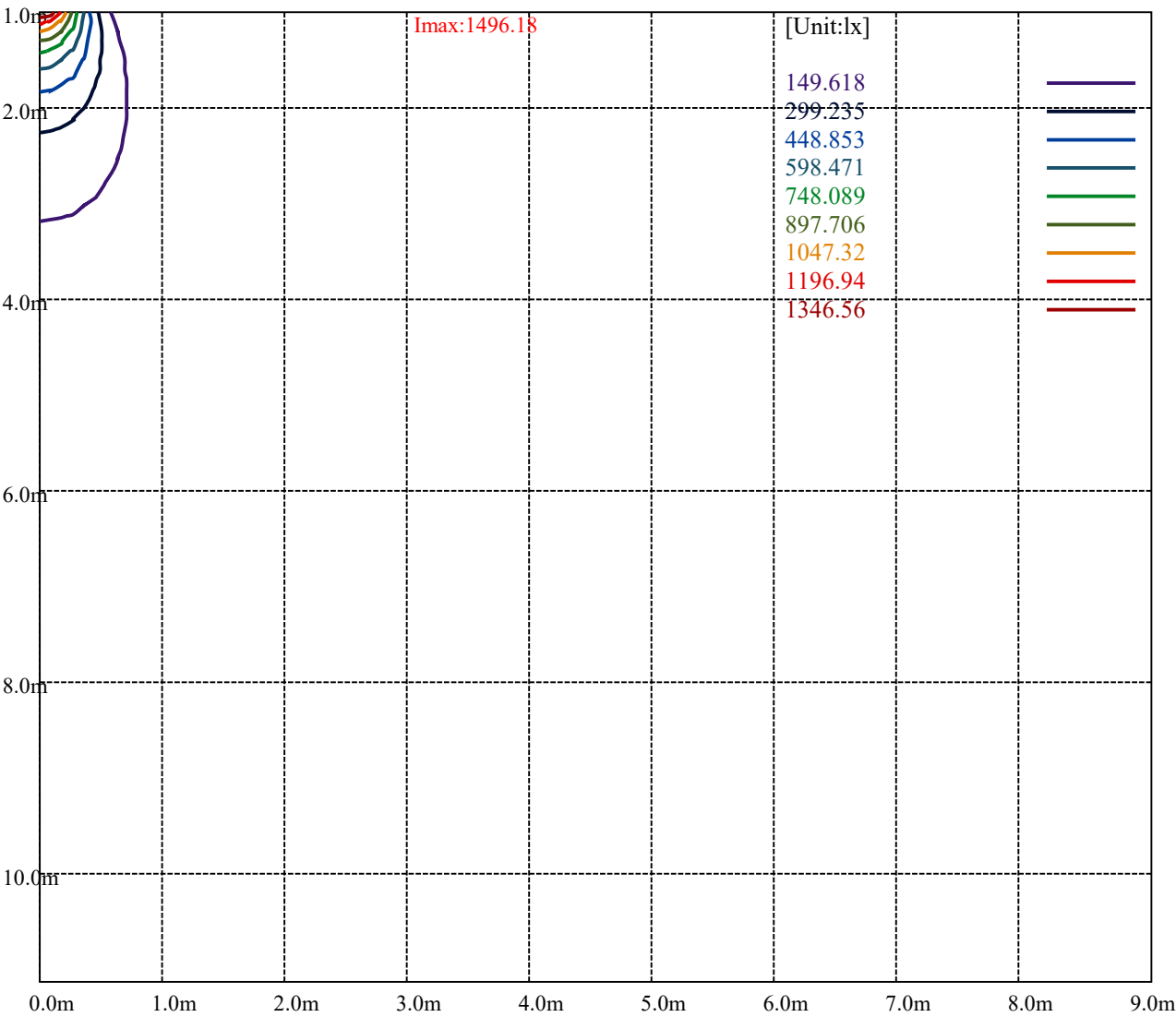
:C90/270Left:21.2 Right:21.2



Max , Ave Beam angle of C90 plane 43.11



(10%Emax)	16.62422	
(20%Emax)	33.24833	
(30%Emax)	49.87255	
(40%Emax)	66.49667	
(50%Emax)	83.12089	
(60%Emax)	99.74511	
(70%Emax)	116.3689	
(80%Emax)	132.9933	
(90%Emax)	149.6178	



Luminance Table

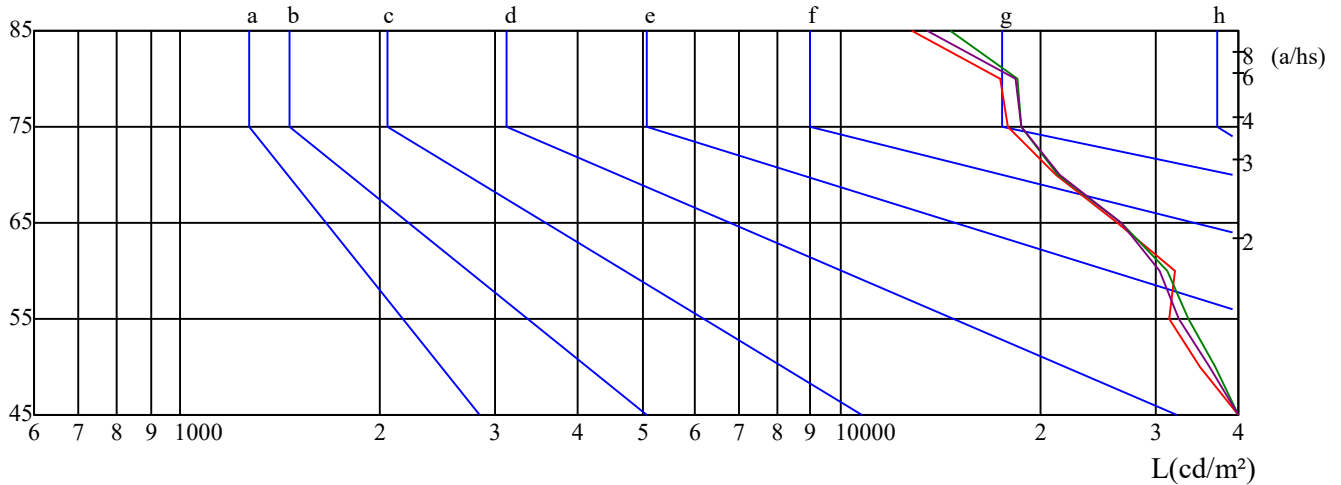
γ	45	50	55	60	65	70	75	80	85
C0	43592	36893	33525	31238	26570	21299	18743	18502	14599
C45	42705	36058	32454	30385	26553	21411	18827	18343	13532
C90	41789	35070	31367	32021	26224	21156	17963	17441	12773

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
26570	26224	26553	18743	17963	18827	14599	12773	13532

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

 $\gamma(^{\circ})$ 

C0 ———

C45 ———

C90 ———

RHOC	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	1.19	1.19	1.19	1.16	1.16	1.16	1.11	1.11	1.11	1.06	1.06	1.06	1.02	1.02	1.02	1.00
1	1.10	1.07	1.04	1.07	1.05	1.03	1.03	1.01	1.00	1.00	0.98	0.97	0.96	0.95	0.94	0.92
2	1.01	0.97	0.93	1.00	0.96	0.92	0.96	0.93	0.90	0.93	0.90	0.88	0.90	0.88	0.86	0.85
3	0.94	0.89	0.84	0.93	0.88	0.84	0.90	0.86	0.82	0.87	0.84	0.81	0.85	0.82	0.80	0.78
4	0.88	0.82	0.77	0.87	0.81	0.77	0.84	0.80	0.76	0.82	0.78	0.75	0.80	0.77	0.74	0.73
5	0.82	0.76	0.72	0.81	0.75	0.71	0.79	0.74	0.71	0.78	0.73	0.70	0.76	0.72	0.69	0.68
6	0.77	0.71	0.67	0.76	0.71	0.66	0.75	0.70	0.66	0.73	0.69	0.65	0.72	0.68	0.65	0.63
7	0.73	0.67	0.62	0.72	0.66	0.62	0.71	0.66	0.62	0.70	0.65	0.61	0.68	0.64	0.61	0.60
8	0.69	0.63	0.59	0.68	0.63	0.59	0.67	0.62	0.58	0.66	0.61	0.58	0.65	0.61	0.58	0.56
9	0.65	0.59	0.55	0.65	0.59	0.55	0.64	0.59	0.55	0.63	0.58	0.55	0.62	0.58	0.55	0.53
10	0.62	0.56	0.52	0.62	0.56	0.52	0.61	0.56	0.52	0.60	0.55	0.52	0.59	0.55	0.52	0.51

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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	1496.18	1503.64	1423.50	1220.33	955.27	666.47	407.35	222.25	132.84
15.0	1496.18	1504.07	1420.20	1222.40	944.71	654.95	409.04	221.86	132.44
30.0	1496.18	1496.45	1410.30	1219.16	941.60	651.24	394.44	213.09	129.68
45.0	1496.18	1499.30	1409.80	1200.53	933.86	628.46	389.38	209.92	128.69
60.0	1496.18	1498.57	1391.89	1187.82	908.43	619.48	371.91	200.48	126.64
75.0	1496.18	1496.36	1389.78	1168.94	897.36	601.41	369.13	200.35	124.03
90.0	1496.18	1488.77	1385.74	1162.82	881.21	597.66	360.85	203.94	123.22
105.0	1496.18	1483.97	1369.92	1157.54	876.71	599.03	366.57	204.89	126.45
120.0	1496.18	1474.13	1362.07	1136.38	858.86	588.34	372.98	204.75	129.49
135.0	1496.18	1488.06	1370.70	1145.69	881.12	609.46	378.76	214.57	131.35
150.0	1496.18	1467.36	1349.22	1147.68	680.59	608.96	378.24	215.53	133.52
165.0	1496.18	1462.91	1346.58	1134.70	878.56	617.89	399.36	218.90	130.01
180.0	1496.18	1399.49	1212.14	962.28	699.39	456.81	274.23	156.14	105.95
195.0	1496.18	1396.41	1220.94	963.23	717.04	474.76	280.86	158.50	107.03
210.0	1496.18	1406.28	1229.96	979.01	719.46	466.05	295.67	159.86	107.18
225.0	1496.18	1409.52	1251.31	990.89	740.68	492.96	295.28	164.47	108.82
240.0	1496.18	1413.32	1247.69	1008.21	740.78	491.74	292.91	163.70	109.53
255.0	1496.18	1418.57	1262.33	1007.91	753.86	500.26	296.97	167.03	109.54
270.0	1496.18	1432.12	1267.80	1020.63	747.35	491.20	290.68	164.23	110.44
285.0	1496.18	1427.91	1268.81	1014.72	735.65	492.65	290.54	163.54	146.43
300.0	1496.18	1425.07	1277.40	1022.85	981.16	471.49	284.99	160.02	106.71
315.0	1496.18	1452.70	1277.60	1033.46	746.41	482.40	279.59	158.31	108.40
330.0	1496.18	1439.47	1277.22	1020.83	732.20	468.12	275.20	151.31	104.61
345.0	1496.18	1437.13	1283.84	1024.56	738.11	469.22	265.19	149.51	101.92
360.0	1496.18	1503.64	1423.50	1220.33	955.27	666.47	407.35	222.25	132.84
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	96.33	72.67	58.64	48.12	35.98	24.01	15.47	10.97	5.40
15.0	95.13	72.71	58.10	47.48	35.49	23.24	15.61	10.89	5.08
30.0	94.75	72.25	57.71	46.92	34.30	22.77	15.55	10.61	4.94
45.0	92.91	70.92	56.57	45.81	33.85	22.17	14.63	10.21	4.32
60.0	91.23	69.53	54.81	45.15	32.92	21.52	14.07	9.66	4.23
75.0	88.87	67.09	53.71	44.02	32.94	21.69	13.84	9.14	3.78
90.0	89.06	66.84	52.95	43.69	32.96	22.03	13.61	9.07	3.89
105.0	89.45	67.80	52.63	43.75	33.48	22.20	14.06	9.25	3.88
120.0	90.57	67.97	53.31	43.53	34.22	22.50	14.48	9.96	4.24
135.0	91.89	68.85	54.95	44.78	34.89	23.51	14.65	10.17	4.48
150.0	93.12	69.49	55.13	45.50	35.30	24.00	15.01	10.29	4.82
165.0	93.33	70.87	55.72	46.29	36.59	23.84	15.06	10.90	5.08
180.0	77.98	61.43	50.10	40.20	27.52	17.18	11.96	7.20	1.80
195.0	80.16	61.64	51.02	40.67	28.23	17.88	12.80	7.72	2.00
210.0	79.75	62.28	50.76	40.88	28.90	18.29	13.35	7.41	2.38
225.0	79.20	61.54	50.59	41.03	29.07	18.77	13.52	8.55	2.39
240.0	77.89	60.97	49.66	41.20	28.97	18.58	13.24	8.28	2.76
255.0	78.35	60.26	49.09	40.70	29.53	18.92	12.83	12.00	2.68
270.0	78.04	60.64	48.79	46.84	29.72	18.89	12.68	8.05	2.41
285.0	78.81	60.49	48.19	40.14	29.51	18.68	12.49	7.58	2.31
300.0	77.84	59.86	48.51	39.57	29.42	17.99	12.27	7.38	2.03
315.0	77.52	60.82	48.42	40.21	29.11	18.38	12.31	7.09	2.15
330.0	77.00	59.95	48.46	38.92	28.26	17.61	12.05	6.95	1.76
345.0	75.77	60.25	48.88	38.81	27.07	17.28	11.83	6.65	1.48
360.0	96.33	72.67	58.64	48.12	35.98	24.01	15.47	10.97	5.40

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Intensity data(cd)									Appendix Page: 11 Total:12	
C/γ(°)	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0	
0.0	0.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
15.0	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
30.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
45.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
60.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
75.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
90.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
105.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
120.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
135.0	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
150.0	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
165.0	0.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
180.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
195.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
210.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
225.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
240.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
255.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
270.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
285.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
315.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
330.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
345.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
360.0	0.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
C/γ(°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0	
0.0	0.00	0.18	0.63	1.35	2.61	3.51	4.23	4.59	4.41	
15.0	0.00	0.09	0.64	1.27	2.45	3.54	4.27	4.54	4.36	
30.0	0.00	0.18	0.64	1.46	2.56	3.57	4.30	4.57	4.48	
45.0	0.00	0.18	0.64	1.47	2.48	3.50	4.32	4.51	4.51	
60.0	0.00	0.18	0.64	1.47	2.48	3.59	4.32	4.51	4.51	
75.0	0.00	0.18	0.65	1.38	2.58	3.51	4.34	4.52	4.43	
90.0	0.00	0.19	0.65	1.48	2.50	3.70	4.35	4.54	4.44	
105.0	0.00	0.18	0.65	1.48	2.59	3.61	4.35	4.53	4.44	
120.0	0.00	0.09	0.65	1.38	2.67	3.60	4.24	4.52	4.43	
135.0	0.00	0.19	0.65	1.49	2.52	3.64	4.29	4.66	4.48	
150.0	0.00	0.19	0.65	1.48	2.50	3.61	4.36	4.45	4.45	
165.0	0.00	0.09	0.65	1.48	2.49	3.51	4.34	4.53	4.34	
180.0	0.00	0.09	0.36	0.72	1.53	2.52	3.24	3.51	4.05	
195.0	0.00	0.09	0.36	0.73	1.63	1.63	3.18	3.54	4.08	
210.0	0.00	0.00	0.27	0.82	1.55	2.47	3.20	3.57	4.02	
225.0	0.00	0.00	0.28	0.74	1.47	2.39	3.13	3.50	3.96	
240.0	0.00	0.00	0.18	0.74	1.56	2.39	3.03	3.49	3.86	
255.0	0.00	0.00	0.28	0.74	1.48	2.31	3.05	3.60	3.97	
270.0	0.00	0.00	0.28	0.74	1.48	2.41	3.05	3.52	3.98	
285.0	0.00	0.09	0.28	0.65	1.48	2.40	3.05	3.51	4.07	
300.0	0.00	0.00	0.28	0.74	1.48	2.31	3.04	3.50	3.97	
315.0	0.00	0.00	0.28	0.75	1.59	2.33	3.17	3.55	4.01	
330.0	0.00	0.00	0.28	0.74	1.48	2.32	3.15	3.52	3.98	
345.0	0.00	0.09	0.18	0.83	1.48	2.31	3.14	3.51	3.97	
360.0	0.00	0.18	0.63	1.35	2.61	3.51	4.23	4.59	4.41	

Intensity data(cd)

C/ γ (°)	180.0
0.0	4.05
15.0	4.36
30.0	4.39
45.0	4.51
60.0	4.41
75.0	4.43
90.0	4.44
105.0	4.44
120.0	4.43
135.0	4.38
150.0	4.36
165.0	4.34
180.0	0.00
195.0	0.00
210.0	0.00
225.0	0.00
240.0	0.00
255.0	0.00
270.0	0.00
285.0	0.00
300.0	0.00
315.0	0.00
330.0	0.00
345.0	0.00
360.0	4.05