
Nata

LumCAT: 3-2093-M	
Luminaire: 92.70.136.00	
Report No: GC2017071303	Voltage(V): 51.2500
Test No: NT-0010	Current(A): 0.8000
LampCAT: CITIZEN CLU044	Power (W): 41.0000
Lamp flux(lm): 5855.0	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 79	Width(mm): 79
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 5157.78
Efficiency(%): 88.09%
Lumens(lm)/Power(W): 125.80
Central intensity(cd): 19422.410
Maximum intensity(cd): 19422.410
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=23.2
[C90/270]Total=23.2
Field angle(10%Imax): [C0/180]Total=58.1
[C90/270]Total=58.1
Maximum s/h(1/2): C0_180=0.39 C90_270=0.39
Maximum s/h(1/4): C0_180=0.40 C90_270=0.40
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 88.09%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.688%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	19422.408	0.000	0	.000%	.000%
1.0	19364.670	18.559	18.559	.317%	.360%
2.0	19245.020	55.416	73.975	.946%	1.434%
3.0	19011.979	91.498	165.473	1.563%	3.208%
4.0	18611.285	125.937	291.41	2.151%	5.650%
5.0	18052.684	157.726	449.137	2.694%	8.708%
6.0	17144.867	184.972	634.109	3.159%	12.294%
7.0	16040.878	205.983	840.093	3.518%	16.288%
8.0	14871.499	221.234	1061.327	3.779%	20.577%
9.0	13343.584	228.668	1289.995	3.906%	25.011%
10.0	11833.339	227.842	1517.837	3.891%	29.428%
11.0	10395.371	222.110	1739.947	3.794%	33.734%
12.0	9224.740	214.476	1954.423	3.663%	37.893%
13.0	7878.806	202.976	2157.399	3.467%	41.828%
14.0	6869.077	188.772	2346.171	3.224%	45.488%
15.0	5979.695	176.394	2522.564	3.013%	48.908%
16.0	5224.503	164.173	2686.737	2.804%	52.091%
17.0	4584.996	152.760	2839.497	2.609%	55.053%
18.0	4086.567	142.975	2982.473	2.442%	57.825%
19.0	3691.718	135.326	3117.799	2.311%	60.449%
20.0	3353.009	128.938	3246.737	2.202%	62.948%
21.0	3062.229	123.186	3369.923	2.104%	65.337%
22.0	2879.553	119.403	3489.325	2.039%	67.652%
23.0	2677.120	116.594	3605.919	1.991%	69.912%
24.0	2513.574	113.487	3719.406	1.938%	72.113%
25.0	2367.558	110.986	3830.393	1.896%	74.264%
26.0	2262.585	109.295	3939.688	1.867%	76.383%
27.0	2161.995	108.248	4047.936	1.849%	78.482%
28.0	2052.918	106.713	4154.649	1.823%	80.551%
29.0	1947.667	104.667	4259.315	1.788%	82.580%
30.0	1828.503	101.956	4361.271	1.741%	84.557%
31.0	1684.017	97.748	4459.019	1.669%	86.452%
32.0	1531.949	92.134	4551.153	1.574%	88.239%
33.0	1374.706	85.631	4636.784	1.463%	89.899%
34.0	1221.302	78.563	4715.347	1.342%	91.422%
35.0	1035.398	70.085	4785.432	1.197%	92.781%
36.0	898.787	61.585	4847.017	1.052%	93.975%
37.0	752.048	53.841	4900.858	.920%	95.019%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	601.712	45.187	4946.044	.772%	95.895%
39.0	450.319	35.909	4981.953	.613%	96.591%
40.0	343.023	27.669	5009.622	.473%	97.128%
41.0	220.499	20.067	5029.689	.343%	97.517%
42.0	139.999	13.097	5042.786	.224%	97.771%
43.0	77.029	8.039	5050.826	.137%	97.926%
44.0	48.514	4.738	5055.564	.081%	98.018%
45.0	36.500	3.267	5058.831	.056%	98.082%
46.0	29.857	2.595	5061.426	.044%	98.132%
47.0	26.205	2.230	5063.656	.038%	98.175%
48.0	24.800	2.062	5065.718	.035%	98.215%
49.0	24.257	2.015	5067.732	.034%	98.254%
50.0	23.854	2.006	5069.738	.034%	98.293%
51.0	23.561	2.006	5071.744	.034%	98.332%
52.0	23.297	2.011	5073.755	.034%	98.371%
53.0	23.019	2.015	5075.77	.034%	98.410%
54.0	22.810	2.020	5077.79	.034%	98.449%
55.0	22.602	2.027	5079.817	.035%	98.488%
56.0	22.421	2.034	5081.851	.035%	98.528%
57.0	22.261	2.043	5083.894	.035%	98.568%
58.0	22.128	2.053	5085.947	.035%	98.607%
59.0	22.010	2.064	5088.011	.035%	98.647%
60.0	21.920	2.075	5090.086	.035%	98.688%
61.0	21.829	2.088	5092.174	.036%	98.728%
62.0	21.760	2.100	5094.274	.036%	98.769%
63.0	21.704	2.114	5096.388	.036%	98.810%
64.0	21.711	2.130	5098.518	.036%	98.851%
65.0	21.822	2.154	5100.673	.037%	98.893%
66.0	21.899	2.181	5102.854	.037%	98.935%
67.0	22.010	2.208	5105.062	.038%	98.978%
68.0	21.989	2.229	5107.291	.038%	99.021%
69.0	21.871	2.238	5109.528	.038%	99.065%
70.0	21.843	2.245	5111.774	.038%	99.108%
71.0	21.774	2.254	5114.028	.039%	99.152%
72.0	21.711	2.261	5116.289	.039%	99.196%
73.0	21.662	2.268	5118.557	.039%	99.240%
74.0	21.614	2.275	5120.832	.039%	99.284%
75.0	21.579	2.282	5123.114	.039%	99.328%

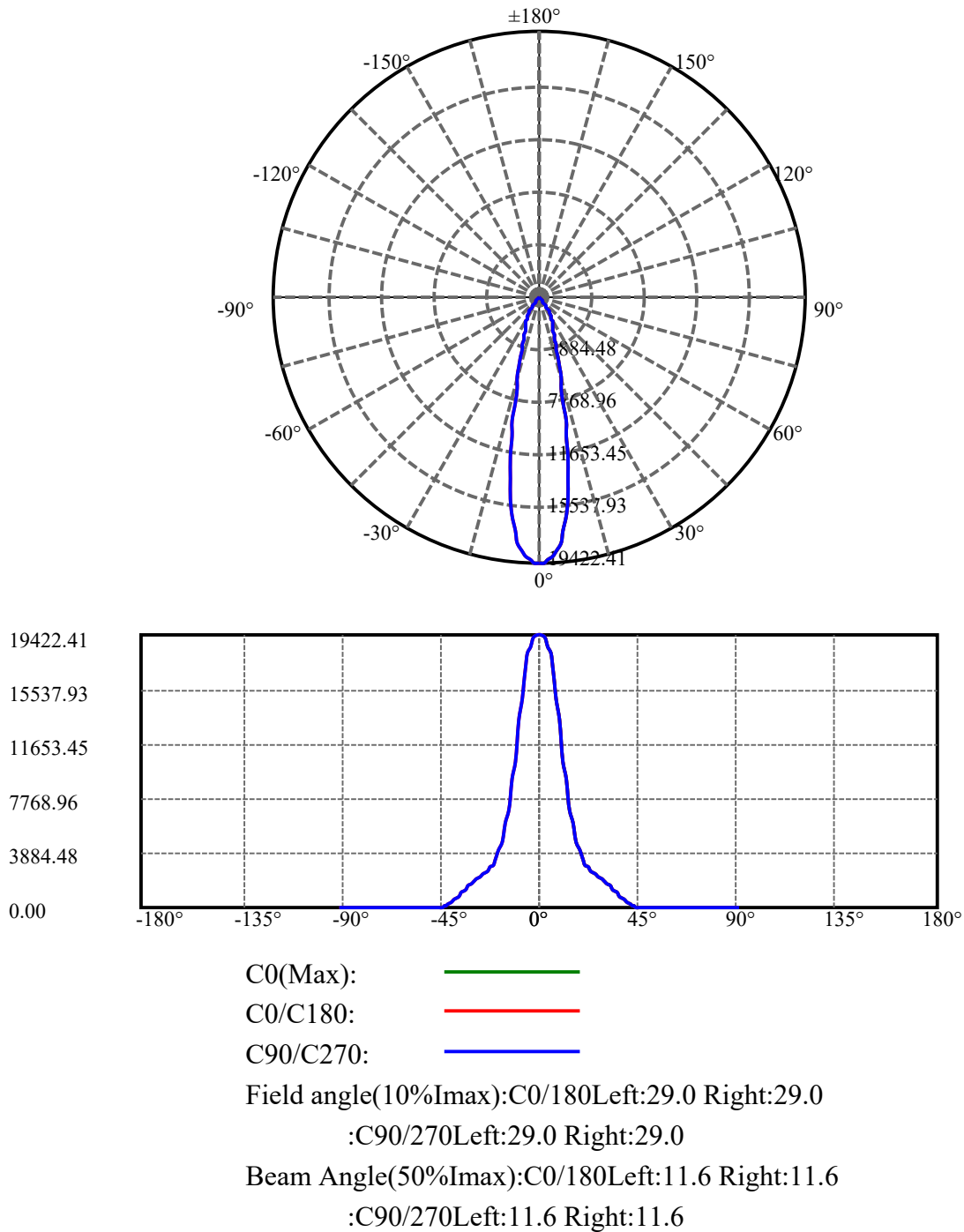
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	21.509	2.287	5125.402	.039%	99.372%
77.0	21.468	2.291	5127.693	.039%	99.417%
78.0	21.440	2.297	5129.99	.039%	99.461%
79.0	21.405	2.302	5132.292	.039%	99.506%
80.0	21.391	2.307	5134.599	.039%	99.551%
81.0	21.363	2.312	5136.911	.039%	99.595%
82.0	21.363	2.317	5139.228	.040%	99.640%
83.0	21.349	2.322	5141.55	.040%	99.685%
84.0	21.335	2.325	5143.876	.040%	99.730%
85.0	21.328	2.329	5146.204	.040%	99.776%
86.0	21.217	2.326	5148.53	.040%	99.821%
87.0	21.134	2.318	5150.847	.040%	99.866%
88.0	21.092	2.313	5153.16	.040%	99.910%
89.0	21.050	2.310	5155.47	.039%	99.955%
90.0	21.015	2.306	5157.777	.039%	100.000%

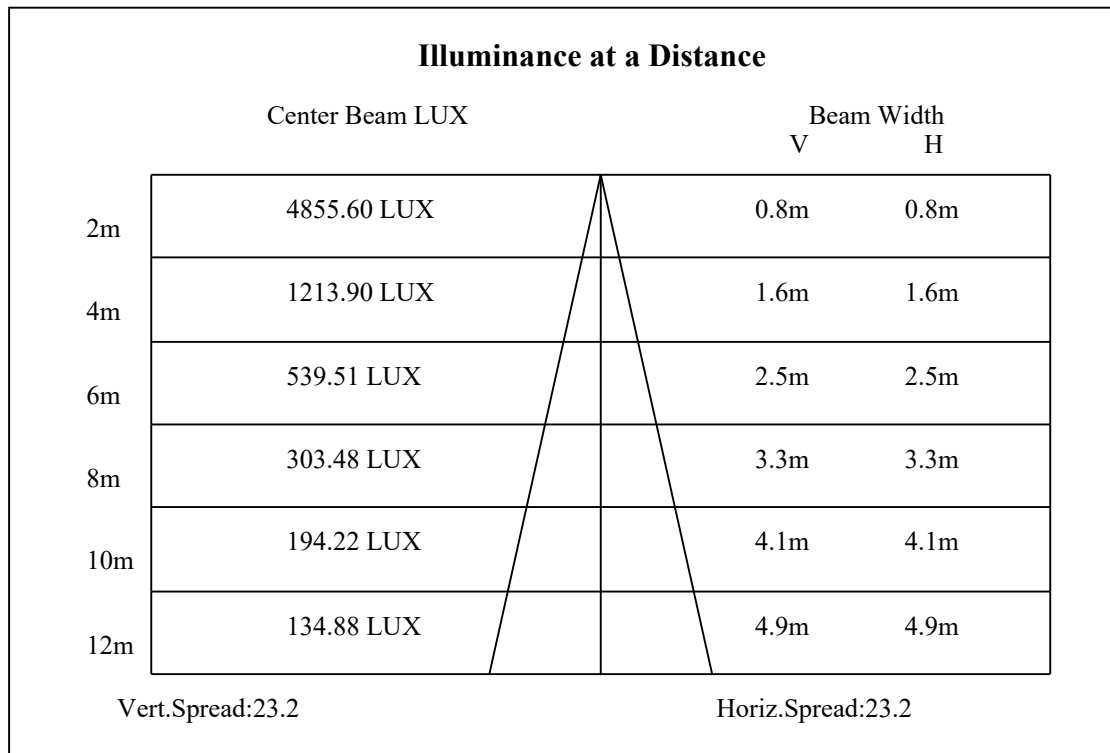
ZONAL LUMEN SUMMARY

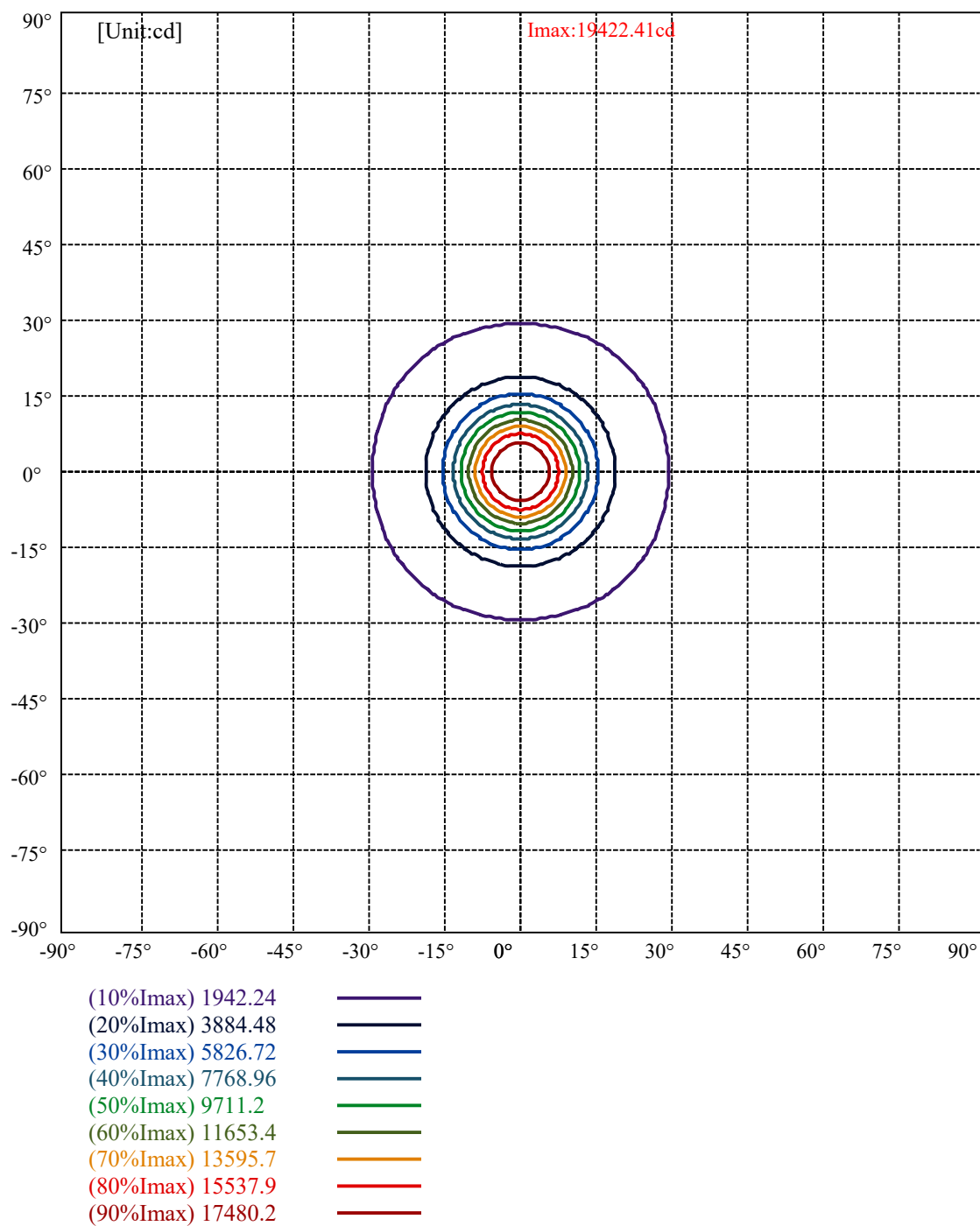
Zone	Lumens	%Lamp	%Fixt
0-30	4361.27	74.49%	84.56%
0-40	5009.62	85.56%	97.13%
0-60	5090.09	86.94%	98.69%
0-90	5155.47	88.05%	99.96%
0-120	5155.47	88.05%	99.96%
0-180	5157.78	88.09%	100.00%
60-90	67.46	1.15%	1.31%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-27.73	4126.22	70.47%	80.00%

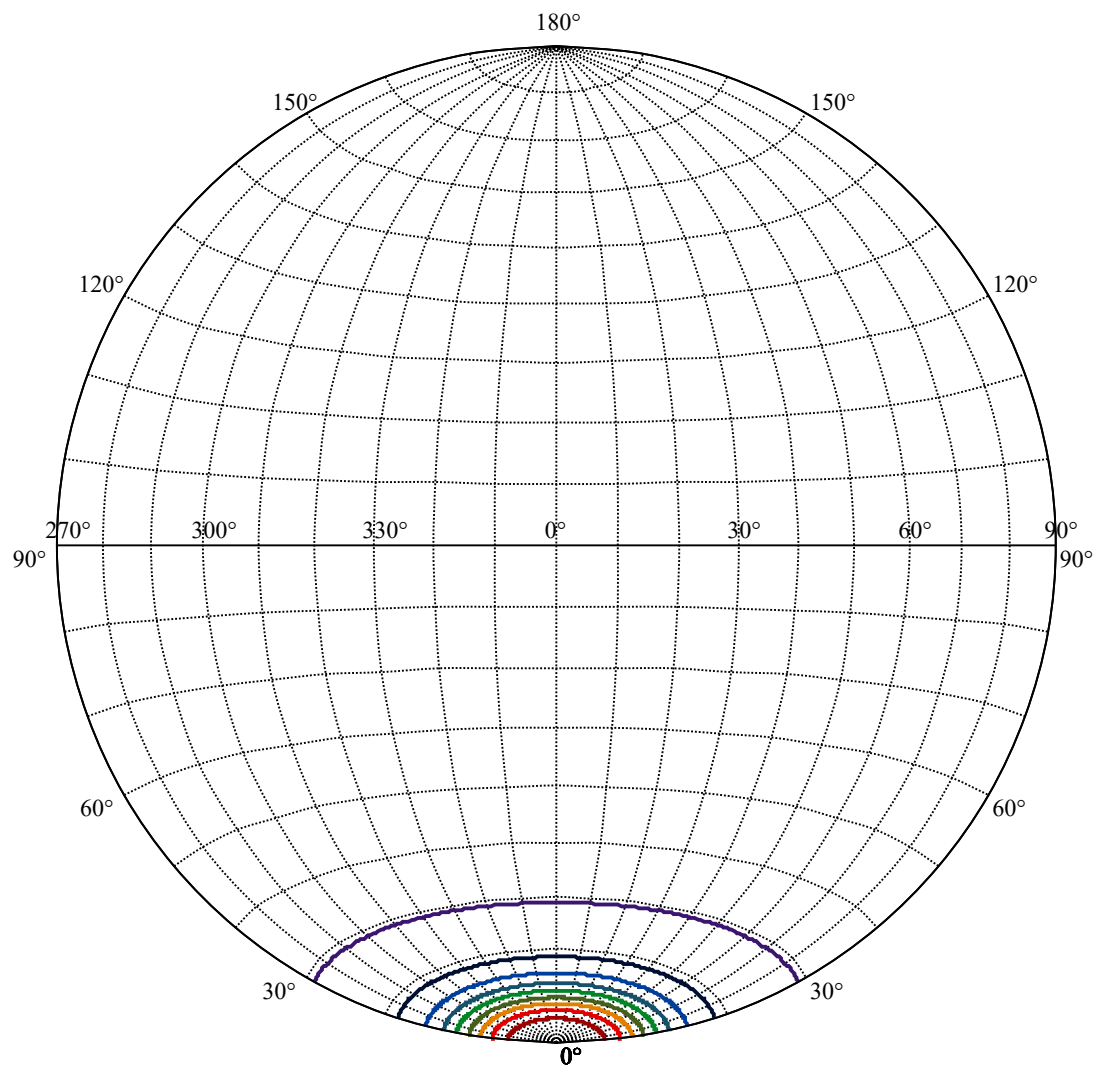
ZONAL LUMEN SUMMARY

0-10	1517.84
10-20	1728.90
20-30	1114.53
30-40	648.35
40-50	60.12
50-60	20.35
60-70	21.69
70-80	22.83
80-90	20.87
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00







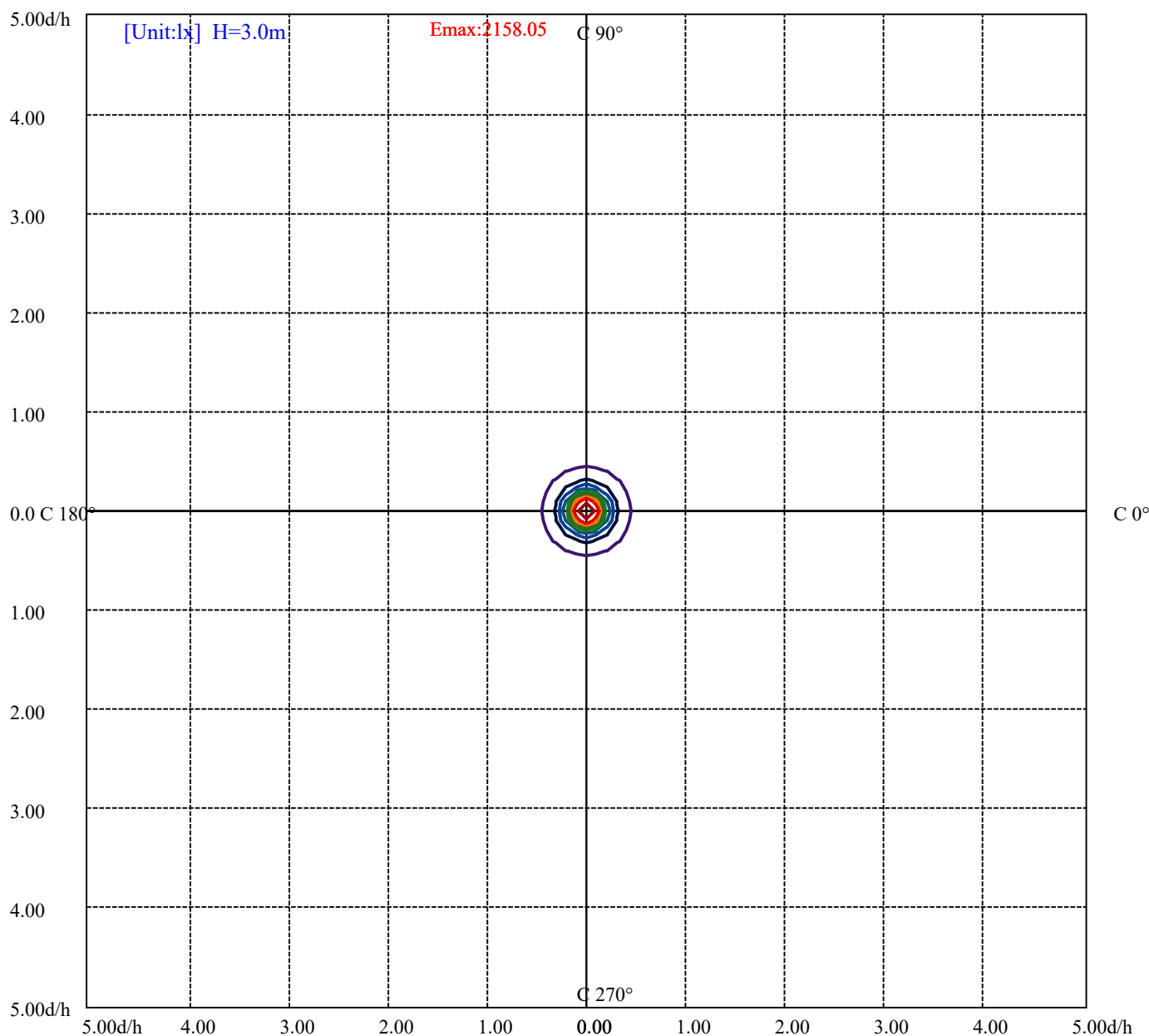


House

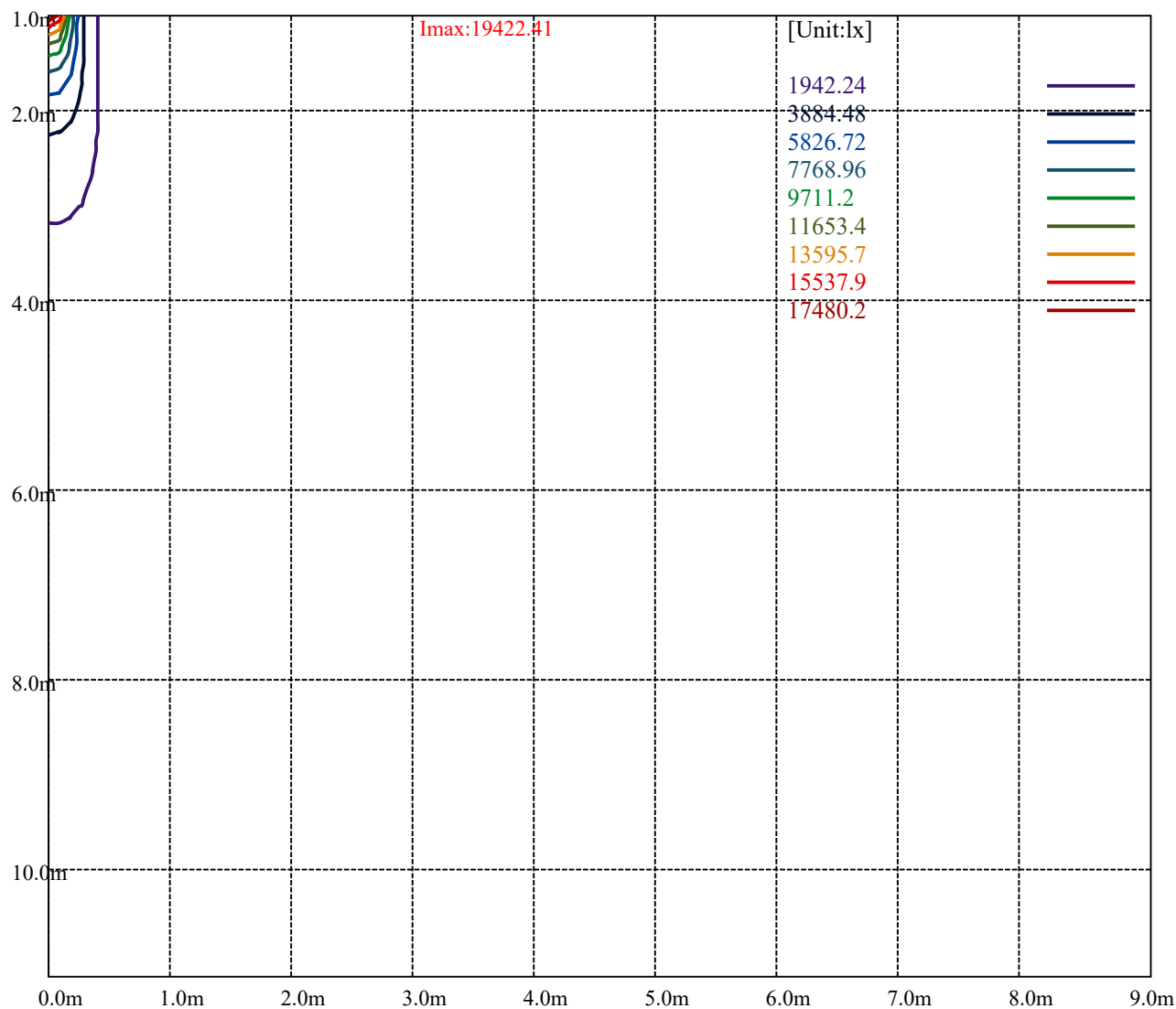
[Unit:cd]

Road

Imax:19422.41	
(10%Imax)	1942.24
(20%Imax)	3884.48
(30%Imax)	5826.72
(40%Imax)	7768.96
(50%Imax)	9711.2
(60%Imax)	11653.4
(70%Imax)	13595.7
(80%Imax)	15537.9
(90%Imax)	17480.2



(10%Emax)	215.8044	—
(20%Emax)	431.6089	—
(30%Emax)	647.4133	—
(40%Emax)	863.2178	—
(50%Emax)	1079.022	—
(60%Emax)	1294.822	—
(70%Emax)	1510.633	—
(80%Emax)	1726.433	—
(90%Emax)	1942.244	—



Luminance Table

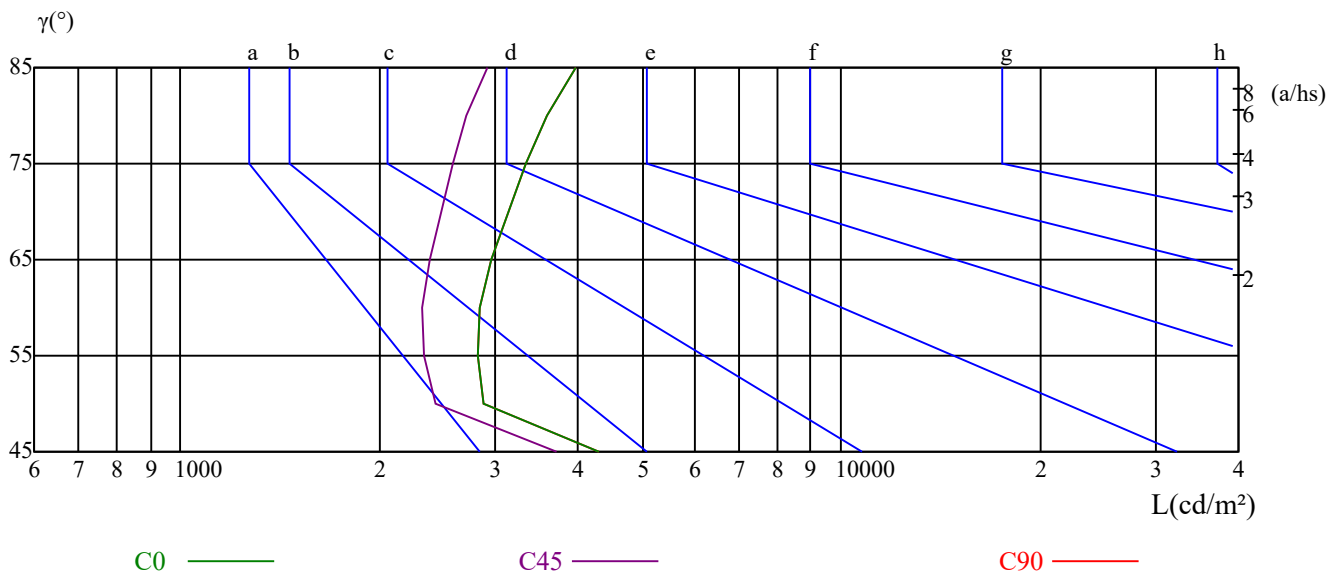
γ	45	50	55	60	65	70	75	80	85
C0	4307	2877	2810	2834	2962	3146	3336	3600	3971
C45	3699	2434	2340	2321	2384	2483	2577	2713	2907
C90	4307	2877	2810	2834	2962	3146	3336	3600	3971

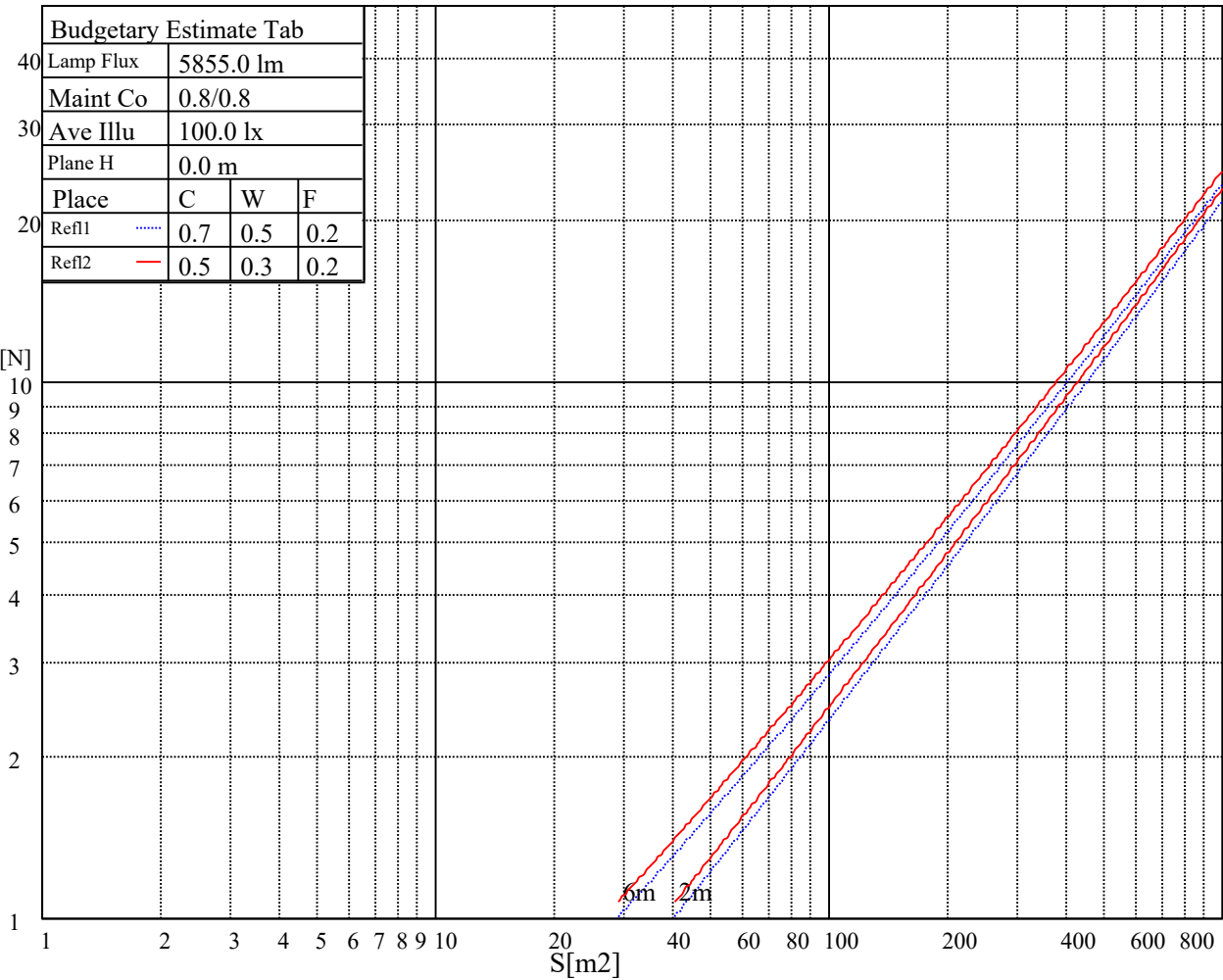
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
7147	7147	7147	11540	11540	11540	33871	33871	33871

Glare Table

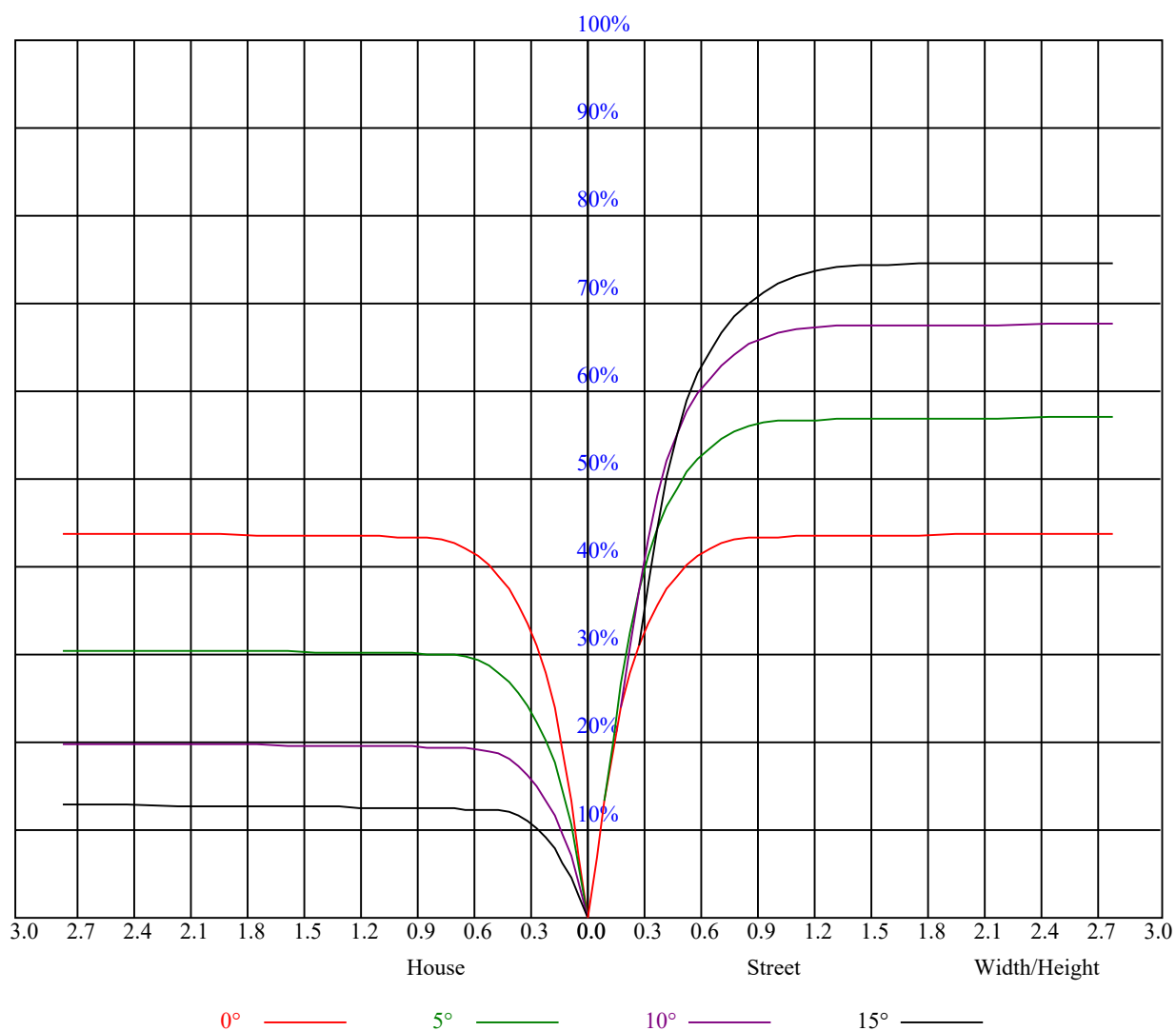
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

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	1.05	1.05	1.05	1.02	1.02	1.02	0.98	0.98	0.98	0.94	0.94	0.94	0.90	0.90	0.90	0.88
1	0.99	0.97	0.95	0.97	0.95	0.93	0.93	0.92	0.90	0.90	0.89	0.88	0.87	0.86	0.85	0.84
2	0.93	0.90	0.87	0.92	0.89	0.87	0.89	0.87	0.85	0.86	0.84	0.83	0.84	0.82	0.81	0.80
3	0.88	0.85	0.82	0.87	0.84	0.81	0.85	0.82	0.80	0.83	0.81	0.79	0.81	0.79	0.77	0.76
4	0.84	0.80	0.77	0.83	0.79	0.77	0.81	0.78	0.76	0.80	0.77	0.75	0.78	0.76	0.74	0.73
5	0.80	0.76	0.73	0.79	0.76	0.73	0.78	0.75	0.72	0.77	0.74	0.71	0.75	0.73	0.71	0.70
6	0.77	0.73	0.70	0.76	0.72	0.69	0.75	0.71	0.69	0.74	0.71	0.68	0.73	0.70	0.68	0.67
7	0.74	0.69	0.66	0.73	0.69	0.66	0.72	0.69	0.66	0.71	0.68	0.66	0.70	0.67	0.65	0.64
8	0.71	0.67	0.64	0.70	0.66	0.64	0.70	0.66	0.63	0.69	0.66	0.63	0.68	0.65	0.63	0.62
9	0.68	0.64	0.61	0.68	0.64	0.61	0.67	0.64	0.61	0.66	0.63	0.61	0.66	0.63	0.61	0.60
10	0.66	0.62	0.59	0.66	0.62	0.59	0.65	0.61	0.59	0.64	0.61	0.59	0.64	0.61	0.59	0.58



Intensity data(cd)										Appendix Page: 16 Total:18	
C/γ(°)	0.0	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0		
0.0	19444.67	19416.84	19338.93	19199.80	18932.67	18481.90	17652.69	16712.18	15582.45		
45.0	19416.84	19272.15	19071.80	18659.98	18075.64	17279.82	15994.27	14753.24	13428.73		
90.0	19383.45	19199.80	18888.15	18459.64	17674.95	16790.09	15543.49	14074.29	12699.70		
135.0	19444.67	19361.19	19171.98	18849.20	18431.81	17658.25	16600.87	15471.14	14185.59		
180.0	19444.67	19366.76	19199.80	18966.07	18481.90	17858.60	16840.17	15543.49	14235.68		
225.0	19416.84	19427.97	19411.28	19311.11	19055.11	18765.72	18181.38	17174.08	16255.83		
270.0	19383.45	19439.10	19466.93	19405.71	19244.32	19005.02	18403.98	17725.03	16817.91		
315.0	19444.67	19433.54	19411.28	19244.32	18993.89	18582.07	17942.08	16873.57	15766.10		
360.0	19444.67	19416.84	19338.93	19199.80	18932.67	18481.90	17652.69	16712.18	15582.45		
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0		
0.0	14001.94	12644.04	11275.01	9783.55	8425.65	7312.62	6266.37	5498.38	4802.73		
45.0	11731.36	10406.85	9149.12	7852.44	6733.84	5904.63	5153.34	4585.69	4062.57		
90.0	10955.57	9541.47	8504.12	7417.80	6173.99	5535.11	4919.04	4329.69	3857.21		
135.0	12465.96	11074.67	9727.90	8336.61	7106.71	6194.02	5453.86	4713.69	4229.52		
180.0	12838.82	10908.27	9770.75	8545.86	7051.06	6254.68	5499.49	4808.30	4230.63		
225.0	15042.63	13200.56	10962.25	10616.66	9178.62	7870.25	6852.94	5992.01	5124.96		
270.0	15387.67	14113.25	12744.22	11213.80	9733.46	8520.26	7273.66	6333.15	5481.68		
315.0	14324.72	12777.61	11029.59	10031.20	8627.11	7361.04	6418.86	5535.11	4890.66		
360.0	14001.94	12644.04	11275.01	9783.55	8425.65	7312.62	6266.37	5498.38	4802.73		
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0		
0.0	4240.65	3839.96	3467.09	3161.01	2938.40	2821.54	2559.42	2428.64	2326.79		
45.0	3645.18	3339.10	3049.71	2810.41	2738.06	2508.77	2360.74	2255.56	2168.74		
90.0	3509.39	3188.28	2961.22	2747.52	2587.80	2437.54	2319.00	2204.36	2119.21		
135.0	3773.18	3444.83	3127.62	2866.06	2821.54	2535.49	2413.05	2269.47	2174.86		
180.0	3814.92	3443.16	3166.02	2913.92	2731.94	2551.07	2411.38	2285.05	2193.23		
225.0	4579.01	4115.44	3689.14	3335.76	3079.20	2841.01	2636.77	2490.97	2352.95		
270.0	4802.73	4307.43	3845.53	3461.53	3188.84	2960.67	2810.41	2567.21	2437.54		
315.0	4327.47	3855.54	3517.74	3201.64	2950.65	2760.88	2597.82	2439.21	2327.35		
360.0	4240.65	3839.96	3467.09	3161.01	2938.40	2821.54	2559.42	2428.64	2326.79		
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0		
0.0	2204.36	2110.31	2020.15	1893.27	1750.80	1615.57	1469.76	1301.69	1136.96		
45.0	2071.91	1963.94	1837.62	1696.82	1540.99	1394.07	1222.11	1070.18	908.23		
90.0	2035.74	1898.83	1772.50	1635.04	1485.34	1305.03	1101.68	1013.08	835.55		
135.0	2089.16	1988.99	1868.22	1749.69	1588.85	1439.15	1279.43	1101.90	947.19		
180.0	2109.75	1996.78	1884.92	1753.03	1611.11	1429.13	1282.77	1099.12	953.92		
225.0	2253.33	2147.60	2060.78	1963.94	1850.97	1691.81	1556.02	1413.55	1094.17		
270.0	2304.53	2196.01	2109.20	2016.26	1894.38	1768.61	1617.24	1468.65	1300.58		
315.0	2227.18	2120.88	2027.94	1919.98	1749.69	1612.23	1468.65	1302.25	1106.58		
360.0	2204.36	2110.31	2020.15	1893.27	1750.80	1615.57	1469.76	1301.69	1136.96		
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0		
0.0	973.90	828.65	682.85	503.09	371.75	283.27	160.00	74.96	48.42		
45.0	738.50	599.92	468.03	317.21	288.83	118.87	59.83	42.24	33.22		
90.0	691.53	551.79	402.31	269.74	172.02	90.99	52.87	40.24	30.11		
135.0	794.15	633.32	484.73	362.29	293.28	147.14	75.91	46.97	37.12		
180.0	810.90	669.10	512.77	368.30	253.94	149.03	83.42	50.36	39.51		
225.0	1075.30	925.37	760.92	600.20	466.03	331.91	226.17	127.55	65.95		
270.0	1134.18	985.03	839.23	657.80	518.12	386.22	299.96	151.21	83.87		
315.0	971.84	823.20	662.87	523.90	380.21	256.55	161.83	82.70	49.92		
360.0	973.90	828.65	682.85	503.09	371.75	283.27	160.00	74.96	48.42		

Intensity data(cd)

C/γ(°)	45.0	46.0	47.0	48.0	49.0	50.0	51.0	52.0	53.0
0.0	40.46	30.27	27.05	25.43	24.88	24.43	24.10	23.82	23.60
45.0	27.27	24.49	24.04	23.71	23.43	23.15	22.98	22.71	22.48
90.0	25.88	24.60	24.10	23.76	23.54	23.26	23.04	22.82	22.59
135.0	28.22	25.38	24.82	24.43	23.99	23.71	23.43	23.26	22.98
180.0	30.83	27.10	24.93	24.10	23.76	23.43	23.21	22.98	22.82
225.0	46.52	35.34	27.32	24.99	24.49	23.99	23.65	23.32	22.93
270.0	51.81	39.85	30.55	26.66	25.15	24.60	24.15	23.82	23.43
315.0	41.02	31.83	26.82	25.32	24.82	24.26	23.93	23.65	23.32
360.0	40.46	30.27	27.05	25.43	24.88	24.43	24.10	23.82	23.60
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	23.37	23.15	22.98	22.82	22.59	22.54	22.43	22.37	22.32
45.0	22.32	22.15	22.04	21.93	21.82	21.76	21.65	21.54	21.54
90.0	22.43	22.26	22.09	21.98	21.93	21.82	21.82	21.70	21.59
135.0	22.82	22.59	22.43	22.26	22.15	22.04	21.98	21.93	21.87
180.0	22.59	22.48	22.32	22.09	22.04	21.93	21.87	21.87	21.82
225.0	22.71	22.48	22.26	22.09	21.93	21.82	21.70	21.59	21.48
270.0	23.21	22.93	22.65	22.48	22.32	22.15	21.98	21.82	21.70
315.0	23.04	22.76	22.59	22.43	22.26	22.04	21.93	21.82	21.76
360.0	23.37	23.15	22.98	22.82	22.59	22.54	22.43	22.37	22.32
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	22.20	22.09	22.09	22.04	21.98	21.93	21.93	21.98	21.98
45.0	21.48	21.59	22.04	22.43	22.76	22.71	22.20	21.93	21.87
90.0	21.65	22.20	22.82	23.26	23.82	23.93	23.65	23.76	23.26
135.0	21.76	21.65	21.65	21.59	21.76	21.82	21.82	21.87	21.98
180.0	21.76	21.65	21.59	21.54	21.54	21.48	21.43	21.43	21.43
225.0	21.43	21.31	21.31	21.31	21.26	21.20	21.20	21.15	21.09
270.0	21.65	21.59	21.54	21.48	21.48	21.43	21.37	21.31	21.26
315.0	21.70	21.59	21.54	21.54	21.48	21.43	21.37	21.31	21.31
360.0	22.20	22.09	22.09	22.04	21.98	21.93	21.93	21.98	21.98
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	21.98	21.98	21.98	21.93	21.87	21.82	21.82	21.87	21.87
45.0	21.76	21.70	21.59	21.54	21.31	21.20	21.20	21.26	21.20
90.0	22.93	22.65	22.48	22.48	22.37	22.20	22.04	21.82	21.65
135.0	21.93	21.93	21.87	21.76	21.70	21.70	21.65	21.59	21.59
180.0	21.43	21.37	21.37	21.31	21.31	21.31	21.31	21.31	21.37
225.0	21.09	21.09	21.09	21.09	21.09	21.04	21.04	21.04	21.04
270.0	21.26	21.26	21.26	21.26	21.20	21.26	21.26	21.20	21.20
315.0	21.31	21.31	21.26	21.26	21.20	21.20	21.20	21.15	21.20
360.0	21.98	21.98	21.98	21.93	21.87	21.82	21.82	21.87	21.87
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	21.87	21.82	21.82	21.87	21.87	21.93	21.82	21.82	21.48
45.0	21.20	21.09	21.15	21.15	21.15	21.20	20.93	20.87	20.87
90.0	21.59	21.54	21.48	21.54	21.48	20.98	20.93	20.93	20.93
135.0	21.48	21.54	21.54	21.48	21.48	21.09	21.09	21.04	21.04
180.0	21.37	21.37	21.37	21.20	21.15	21.04	21.04	21.04	21.04
225.0	21.04	21.09	21.09	21.09	21.09	21.09	20.87	20.93	20.93
270.0	21.15	21.26	21.15	21.20	21.26	21.20	21.20	21.04	21.04
315.0	21.20	21.20	21.20	21.15	21.15	21.20	21.20	21.09	21.09
360.0	21.87	21.82	21.82	21.87	21.87	21.93	21.82	21.82	21.48

Intensity data(cd)

Appendix Page: 18 Total:18

C/γ(°)	90.0
0.0	21.43
45.0	20.87
90.0	20.93
135.0	21.04
180.0	21.04
225.0	20.81
270.0	20.98
315.0	21.04
360.0	21.43