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Nata

Client:

LumCAT: 2-1120-A3

Luminaire: 99.02.73.172+92.76.365.00

Report No: nata-0100

Voltage(V): 34.0000

Test No: GC2018082802

Current(A): 0.5000

LampCAT: BRIDGELUX V13B

Power (W): 17.0000

Lamp flux(lm): 2575.0

PF: 0.0000

Number of Lamps: 1

Ballast type: DC

Length(mm): 71

Width(mm): 71

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 2353.75, Efficiency(%): 91.41% , Luminous Efficacy(lm/W): 138.46

Central intensity(cd): 15882.400, Maximum intensity(cd): 15882.400

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=15.2

[C90/270]Total=15.2

Field angle(10%Imax): [C0/180]Total=31.4

[C90/270]Total=31.4

Maximum s/h(1/2): C0_180=0.26 C90_270=0.26

Maximum s/h(1/4): C0_180=0.26 C90_270=0.26

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 91.55%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 98.491%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	15882.395	3.800	3.8	.148%	.161%
1.0	15779.164	30.199	33.999	1.173%	1.444%
2.0	15402.716	58.948	92.947	2.289%	3.949%
3.0	14642.250	84.035	176.981	3.263%	7.519%
4.0	13598.243	104.021	281.002	4.040%	11.938%
5.0	12105.526	115.699	396.701	4.493%	16.854%
6.0	10599.940	121.504	518.205	4.719%	22.016%
7.0	8910.741	119.086	637.291	4.625%	27.076%
8.0	7379.278	112.621	749.912	4.374%	31.860%
9.0	5842.860	100.233	850.145	3.893%	36.119%
10.0	4481.522	85.339	935.484	3.314%	39.744%
11.0	3583.828	74.989	1010.473	2.912%	42.930%
12.0	2893.489	65.971	1076.444	2.562%	45.733%
13.0	2421.931	59.745	1136.189	2.320%	48.271%
14.0	1981.962	52.580	1188.769	2.042%	50.505%
15.0	1727.326	49.026	1237.795	1.904%	52.588%
16.0	1528.710	46.208	1284.003	1.794%	54.551%
17.0	1399.740	44.878	1328.881	1.743%	56.458%
18.0	1303.460	44.170	1373.051	1.715%	58.335%
19.0	1235.741	44.119	1417.17	1.713%	60.209%
20.0	1188.668	44.582	1461.752	1.731%	62.103%
21.0	1150.610	45.218	1506.97	1.756%	64.024%
22.0	1112.600	45.705	1552.675	1.775%	65.966%
23.0	1089.504	46.683	1599.358	1.813%	67.949%
24.0	1062.829	47.405	1646.764	1.841%	69.963%
25.0	1030.346	47.751	1694.515	1.854%	71.992%
26.0	1002.006	48.169	1742.683	1.871%	74.039%
27.0	971.807	48.381	1791.065	1.879%	76.094%
28.0	938.010	48.291	1839.356	1.875%	78.146%
29.0	905.568	48.144	1887.5	1.870%	80.191%
30.0	876.539	48.061	1935.561	1.866%	82.233%
31.0	845.625	47.761	1983.322	1.855%	84.262%
32.0	820.540	47.683	2031.004	1.852%	86.288%
33.0	785.971	46.943	2077.947	1.823%	88.282%
34.0	717.123	43.975	2121.922	1.708%	90.151%
35.0	638.400	40.155	2162.077	1.559%	91.857%
36.0	553.000	35.645	2197.721	1.384%	93.371%
37.0	459.432	30.320	2228.042	1.177%	94.659%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	365.134	24.652	2252.694	.957%	95.707%
39.0	278.978	19.253	2271.946	.748%	96.525%
40.0	197.976	13.955	2285.901	.542%	97.117%
41.0	114.325	8.225	2294.126	.319%	97.467%
42.0	60.438	4.435	2298.561	.172%	97.655%
43.0	34.403	2.573	2301.134	.100%	97.765%
44.0	27.549	2.099	2303.233	.081%	97.854%
45.0	22.195	1.721	2304.954	.067%	97.927%
46.0	17.659	1.393	2306.347	.054%	97.986%
47.0	15.774	1.265	2307.612	.049%	98.040%
48.0	14.817	1.207	2308.819	.047%	98.091%
49.0	13.881	1.149	2309.968	.045%	98.140%
50.0	13.331	1.120	2311.088	.043%	98.187%
51.0	13.007	1.108	2312.197	.043%	98.235%
52.0	12.725	1.100	2313.296	.043%	98.281%
53.0	12.463	1.092	2314.388	.042%	98.328%
54.0	12.223	1.084	2315.472	.042%	98.374%
55.0	12.030	1.081	2316.553	.042%	98.420%
56.0	11.816	1.074	2317.627	.042%	98.465%
57.0	11.617	1.068	2318.695	.041%	98.511%
58.0	11.452	1.065	2319.76	.041%	98.556%
59.0	11.314	1.063	2320.824	.041%	98.601%
60.0	11.163	1.060	2321.884	.041%	98.646%
61.0	11.046	1.059	2322.943	.041%	98.691%
62.0	10.942	1.060	2324.003	.041%	98.736%
63.0	10.853	1.060	2325.063	.041%	98.781%
64.0	10.764	1.061	2326.124	.041%	98.826%
65.0	10.688	1.062	2327.186	.041%	98.871%
66.0	10.619	1.064	2328.25	.041%	98.917%
67.0	10.557	1.066	2329.316	.041%	98.962%
68.0	10.495	1.067	2330.383	.041%	99.007%
69.0	10.447	1.070	2331.452	.042%	99.053%
70.0	10.385	1.070	2332.523	.042%	99.098%
71.0	10.337	1.072	2333.594	.042%	99.144%
72.0	10.309	1.075	2334.67	.042%	99.189%
73.0	10.275	1.078	2335.747	.042%	99.235%
74.0	10.234	1.079	2336.826	.042%	99.281%
75.0	10.213	1.082	2337.908	.042%	99.327%

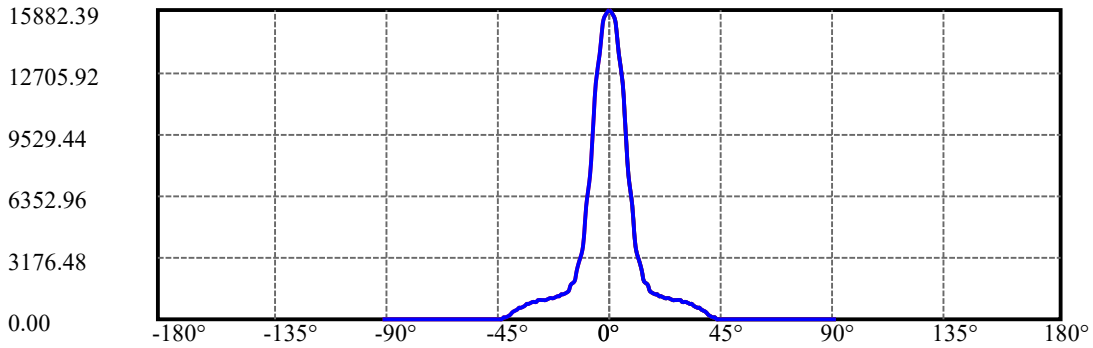
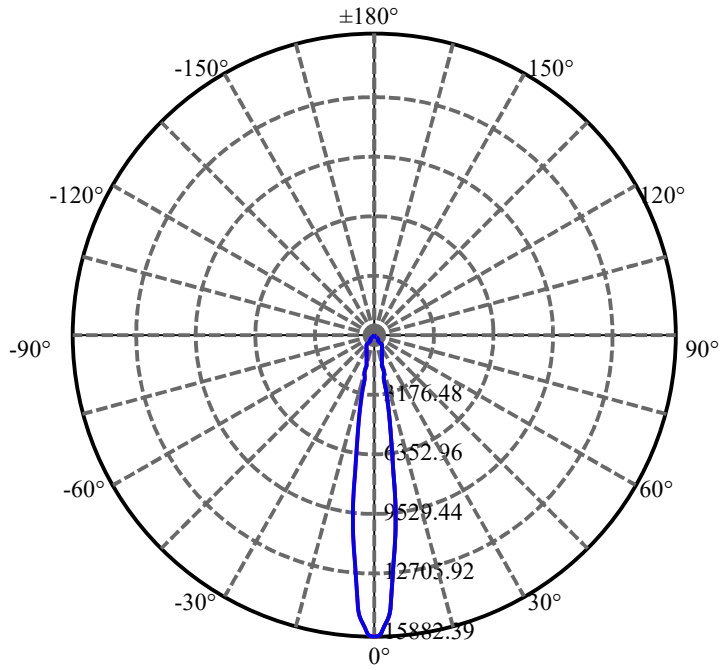
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	10.179	1.083	2338.991	.042%	99.373%
77.0	10.165	1.086	2340.077	.042%	99.419%
78.0	10.137	1.087	2341.164	.042%	99.465%
79.0	10.117	1.089	2342.253	.042%	99.512%
80.0	10.096	1.090	2343.344	.042%	99.558%
81.0	10.075	1.091	2344.435	.042%	99.604%
82.0	10.055	1.092	2345.527	.042%	99.651%
83.0	10.048	1.094	2346.62	.042%	99.697%
84.0	10.041	1.095	2347.715	.043%	99.744%
85.0	10.089	1.102	2348.818	.043%	99.790%
86.0	10.110	1.106	2349.923	.043%	99.837%
87.0	10.034	1.099	2351.022	.043%	99.884%
88.0	9.951	1.091	2352.113	.042%	99.930%
89.0	9.951	1.091	2353.204	.042%	99.977%
90.0	9.958	0.546	2353.75	.021%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1935.56	75.17%	82.23%
0-40	2285.90	88.77%	97.12%
0-60	2321.88	90.17%	98.65%
0-90	2353.20	91.39%	99.98%
0-120	2353.20	91.39%	99.98%
0-180	2353.75	91.41%	100.00%
60-90	32.38	1.26%	1.38%
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%
0-28.91	1883.00	73.13%	80.00%

ZONAL LUMEN SUMMARY

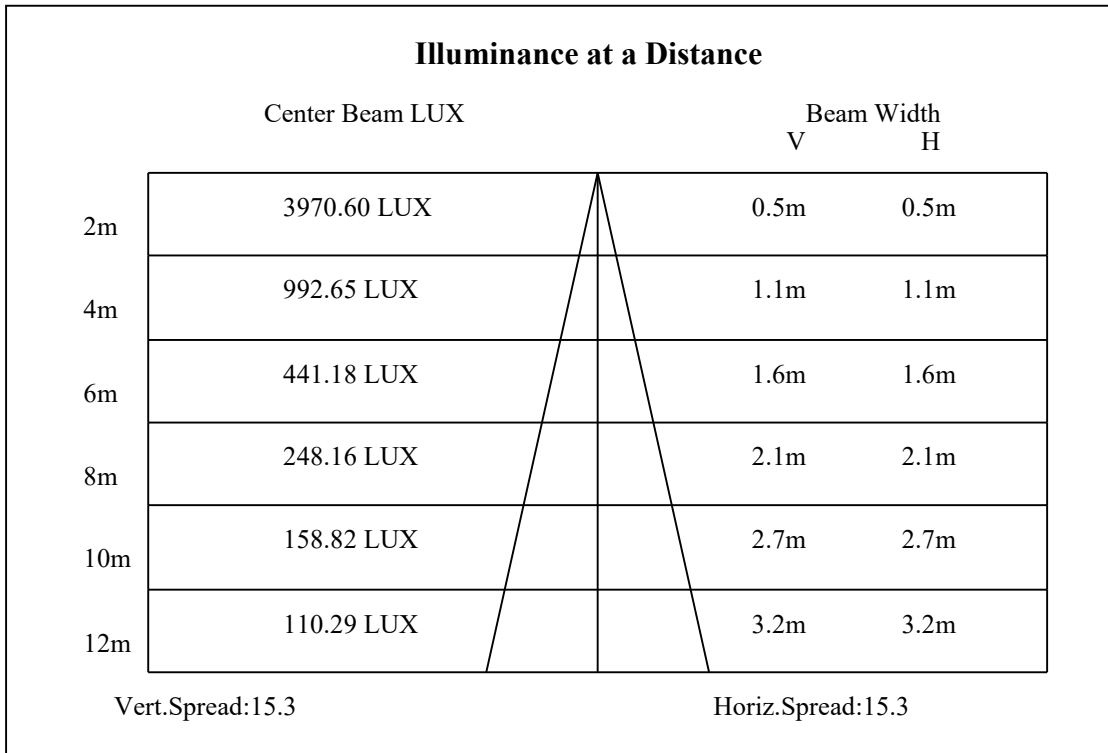
0-10	935.48
10-20	526.27
20-30	473.81
30-40	350.34
40-50	25.19
50-60	10.80
60-70	10.64
70-80	10.82
80-90	9.86
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

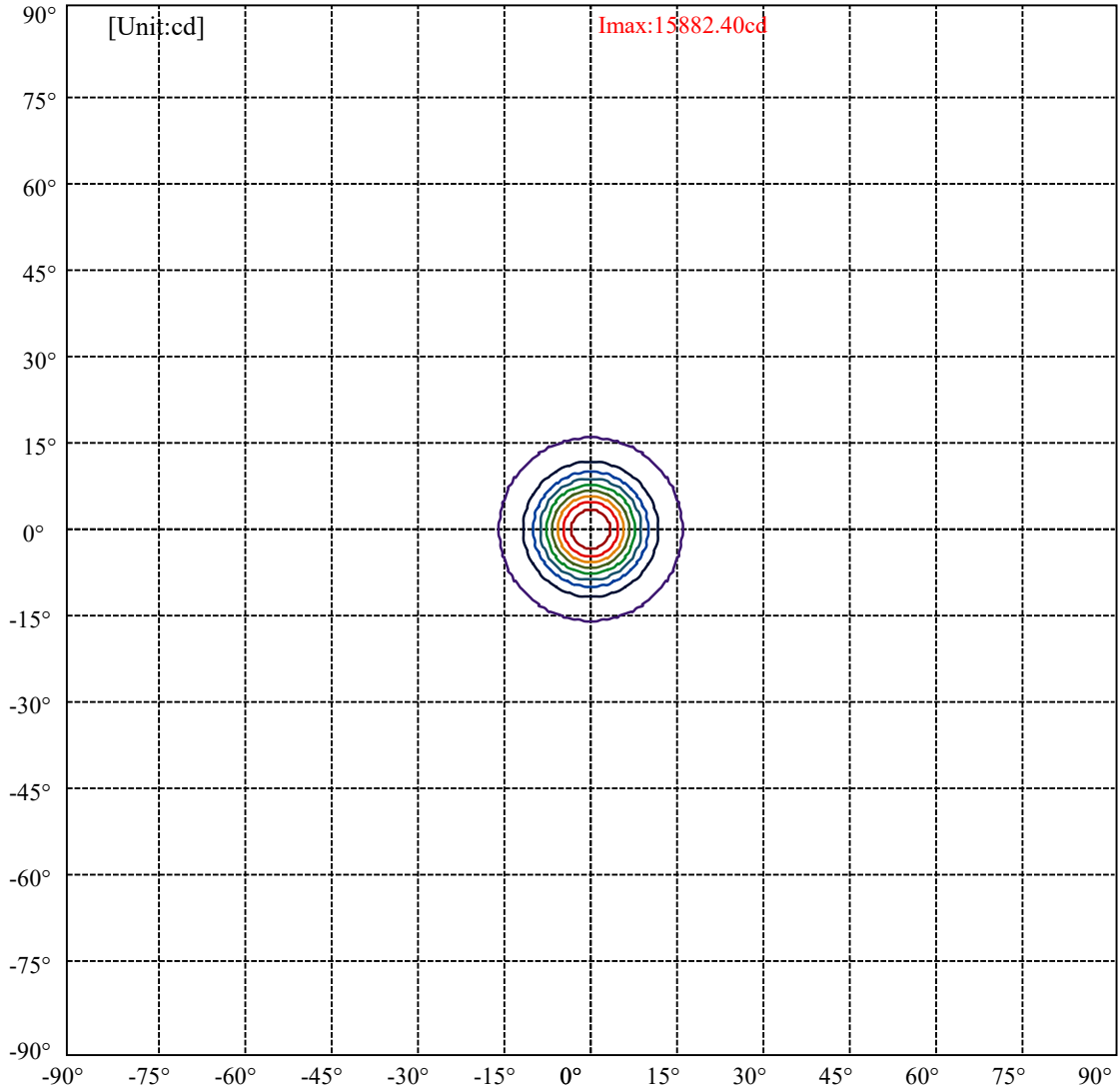


C0(Max): —————
C0/C180: —————
C90/C270: —————

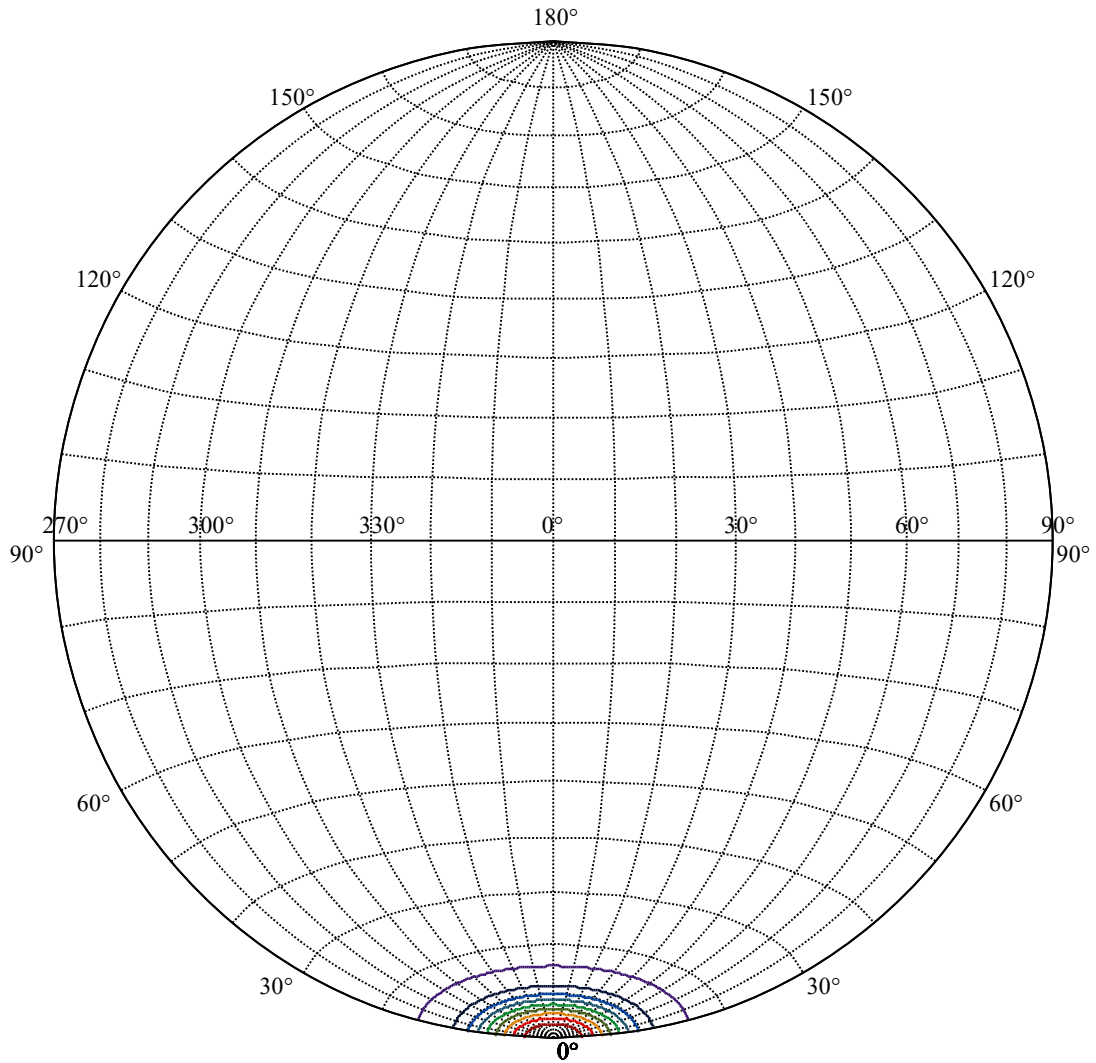
Field angle(10%Imax):C0/180Left:15.7 Right:15.7
:C90/270Left:15.7 Right:15.7

Beam Angle(50%Imax):C0/180Left:7.6 Right:7.6
:C90/270Left:7.6 Right:7.6





(10%Imax) 1588.24	—
(20%Imax) 3176.48	—
(30%Imax) 4764.72	—
(40%Imax) 6352.96	—
(50%Imax) 7941.2	—
(60%Imax) 9529.44	—
(70%Imax) 11117.7	—
(80%Imax) 12705.9	—
(90%Imax) 14294.2	—



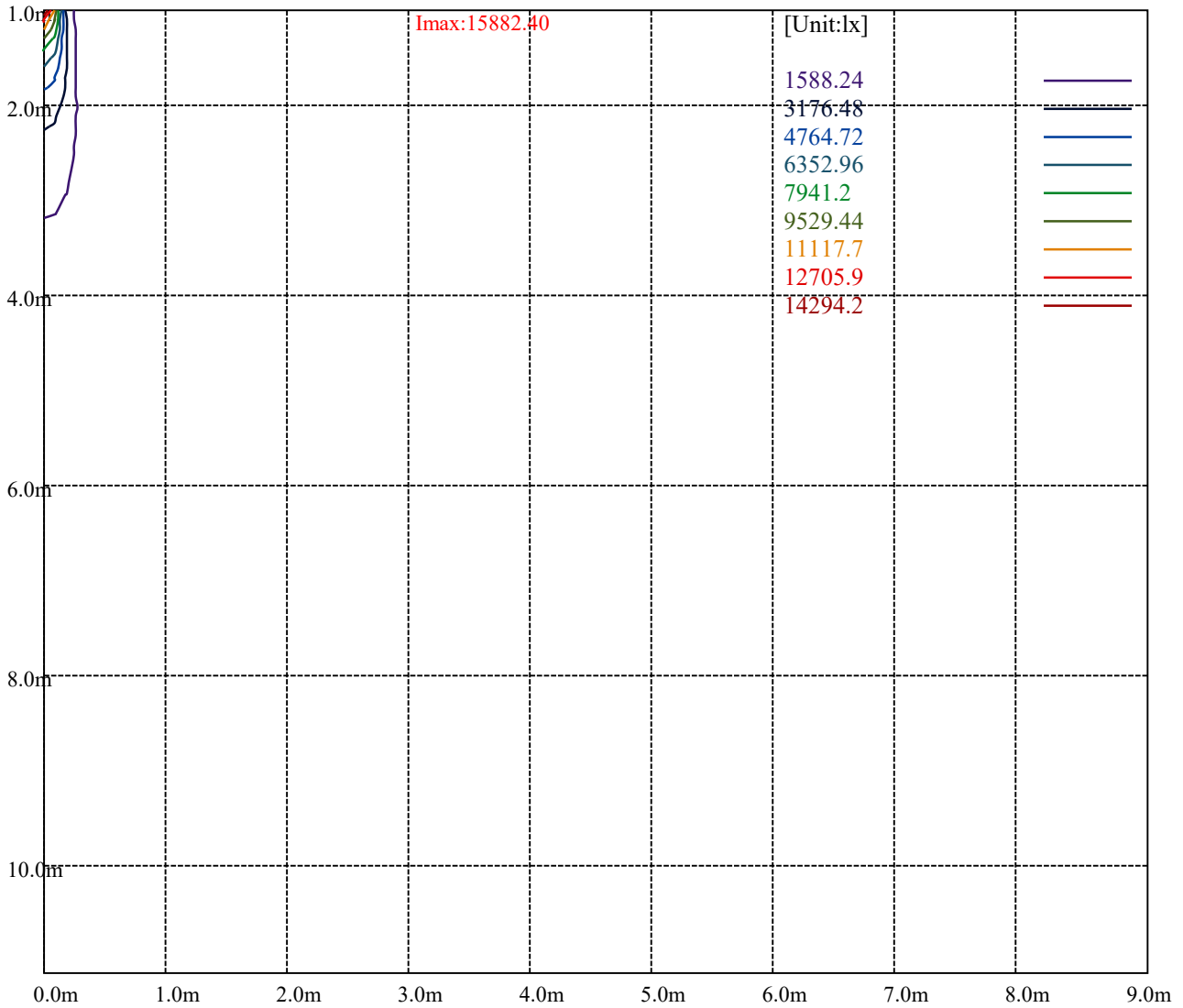
House

[Unit:cd]

Road

Imax:15882.40

(10%Imax) 1588.24	—
(20%Imax) 3176.48	—
(30%Imax) 4764.72	—
(40%Imax) 6352.96	—
(50%Imax) 7941.2	—
(60%Imax) 9529.44	—
(70%Imax) 11117.7	—
(80%Imax) 12705.9	—
(90%Imax) 14294.2	—



Luminance Table

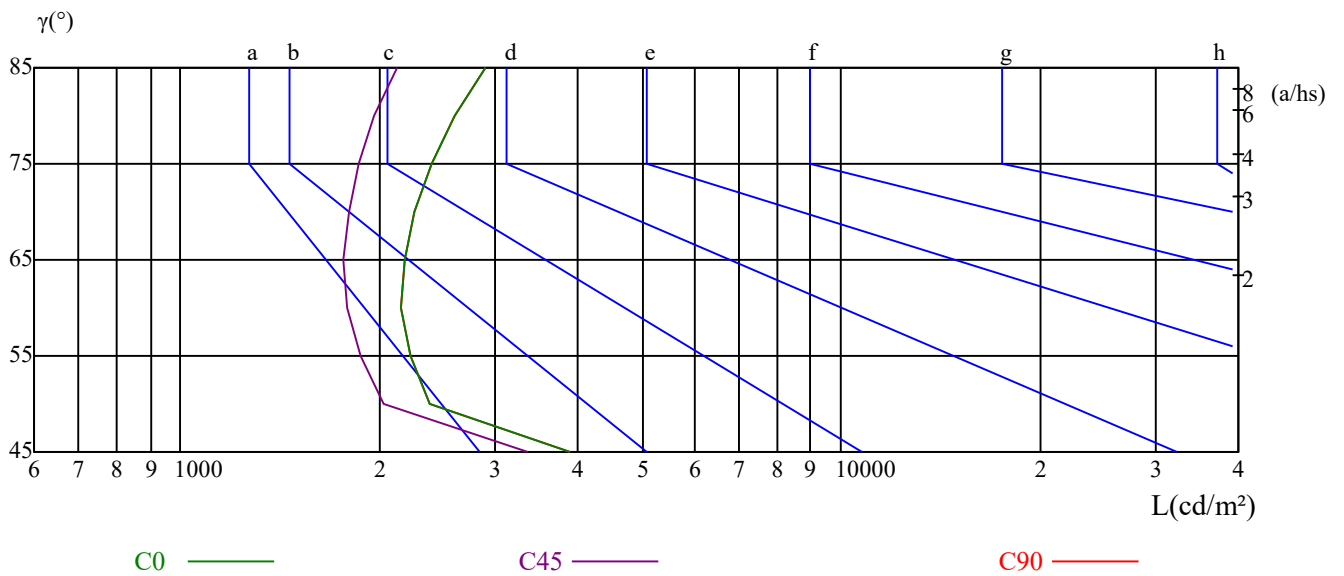
γ	45	50	55	60	65	70	75	80	85
C0	3878	2389	2231	2161	2182	2261	2401	2601	2899
C45	3354	2036	1871	1783	1768	1796	1865	1969	2128
C90	3878	2389	2231	2161	2182	2261	2401	2601	2899

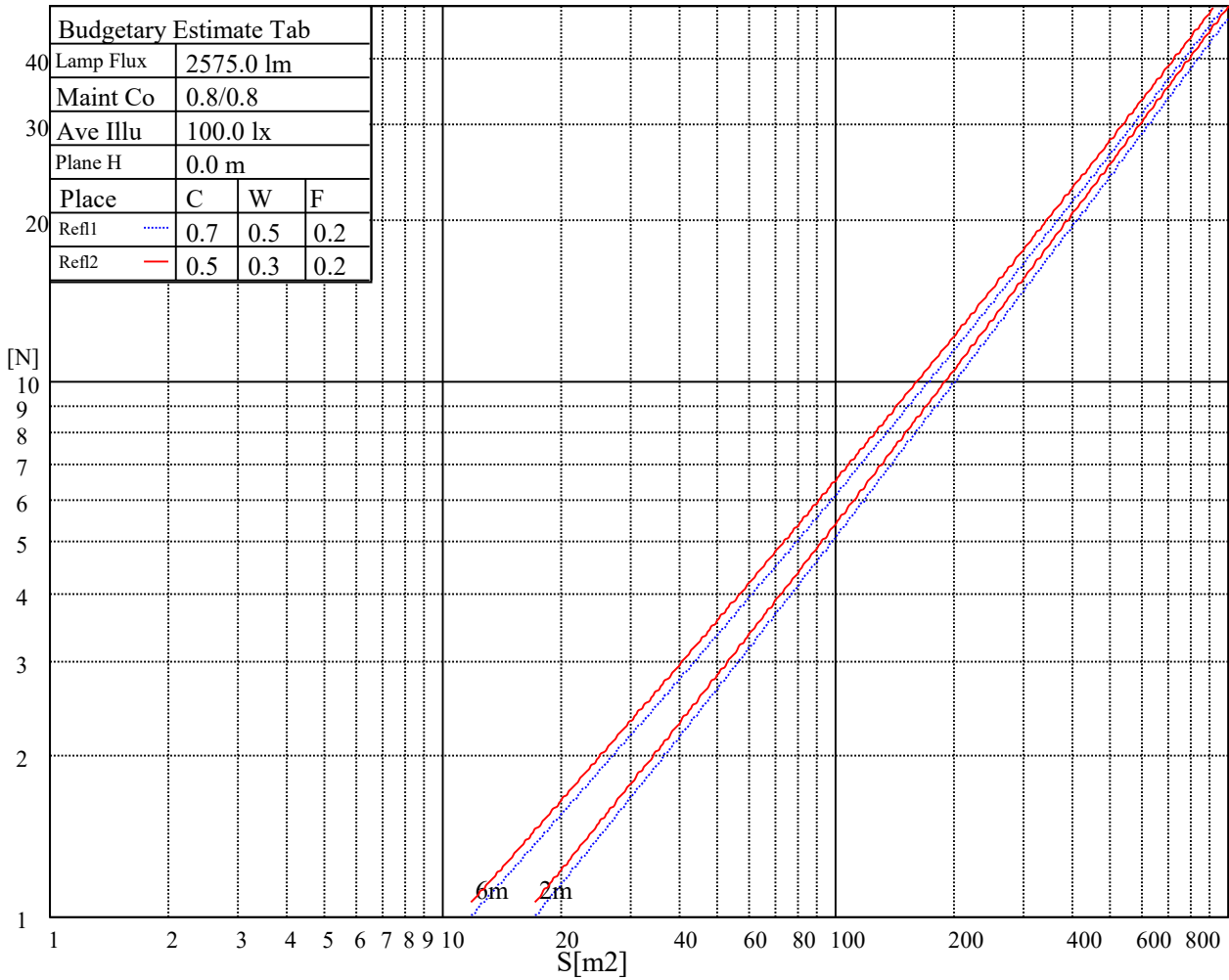
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
5017	5017	5017	7828	7828	7828	22964	22964	22964

Glare Table

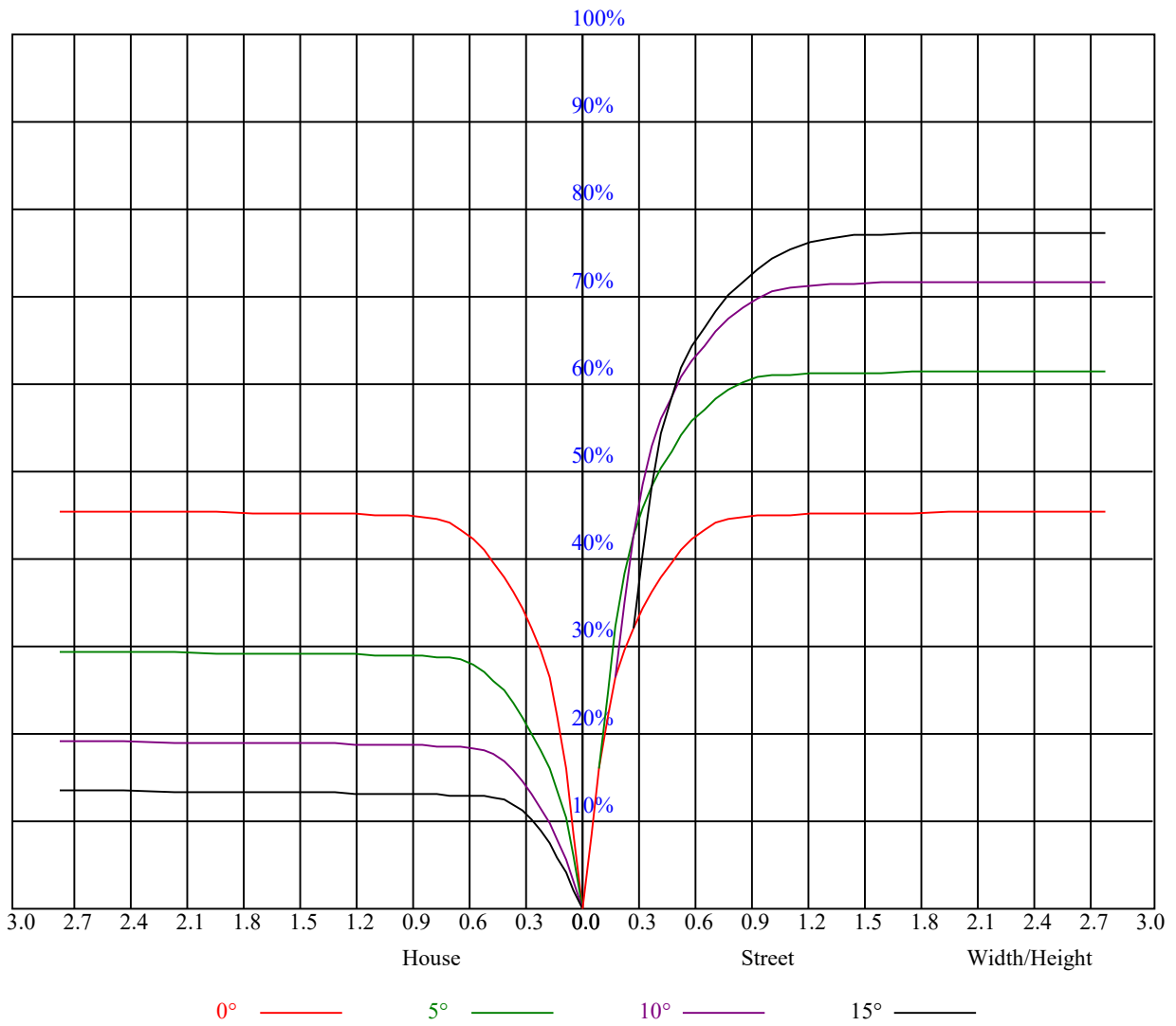
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

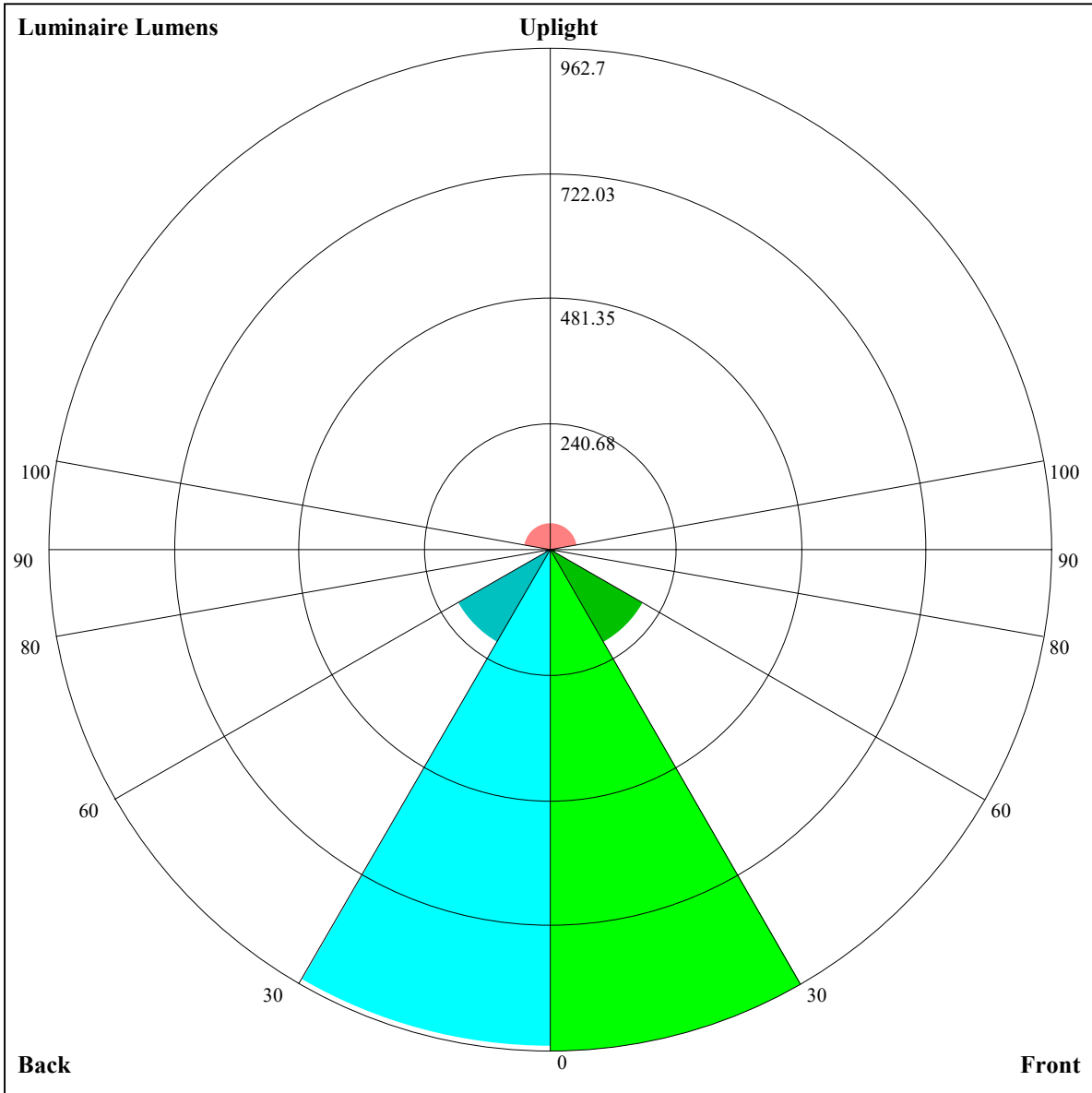
Luminance Limiting Curve





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	1.09	1.09	1.09	1.06	1.06	1.06	1.02	1.02	1.02	0.97	0.97	0.97	0.93	0.93	0.93	0.92
1	1.02	1.00	0.99	1.00	0.99	0.97	0.97	0.95	0.94	0.93	0.92	0.91	0.90	0.89	0.89	0.87
2	0.97	0.94	0.91	0.95	0.93	0.90	0.92	0.90	0.88	0.90	0.88	0.86	0.87	0.86	0.85	0.83
3	0.92	0.88	0.85	0.91	0.88	0.85	0.89	0.86	0.83	0.86	0.84	0.82	0.85	0.83	0.81	0.80
4	0.88	0.84	0.81	0.87	0.83	0.80	0.85	0.82	0.79	0.83	0.81	0.78	0.82	0.79	0.78	0.76
5	0.84	0.80	0.77	0.83	0.79	0.77	0.82	0.78	0.76	0.80	0.78	0.75	0.79	0.77	0.75	0.73
6	0.81	0.77	0.74	0.80	0.76	0.73	0.79	0.75	0.73	0.78	0.75	0.72	0.77	0.74	0.72	0.71
7	0.78	0.74	0.71	0.77	0.73	0.70	0.76	0.73	0.70	0.75	0.72	0.70	0.74	0.72	0.69	0.68
8	0.75	0.71	0.68	0.75	0.71	0.68	0.74	0.70	0.68	0.73	0.70	0.67	0.72	0.69	0.67	0.66
9	0.73	0.68	0.66	0.72	0.68	0.66	0.71	0.68	0.65	0.71	0.68	0.65	0.70	0.67	0.65	0.64
10	0.70	0.66	0.64	0.70	0.66	0.64	0.69	0.66	0.63	0.69	0.66	0.63	0.68	0.65	0.63	0.62





Luminaire Lumens:

FL=962.7,FM=206.64,FH=10.71,FVH=5.47

BL=953.9,BM=205.92,BH=10.74,BVH=5.48

UL=10.87,UH=51.7

BUG Rating:B2-U2-G0

Intensity data(cd)

C/γ(°)	0.0	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0
0.0	15823.21	15812.20	15498.38	14876.24	13852.19	12437.24	10972.74	9216.44	7669.36
45.0	15938.83	15784.67	15294.67	14540.40	13345.67	11831.62	10317.57	8522.73	7008.68
90.0	15850.74	15547.93	14980.85	13841.18	12607.92	10981.00	9216.44	7649.54	6189.99
135.0	15916.81	15773.66	15300.17	14711.07	13472.30	12178.48	10708.47	8764.98	7245.42
180.0	15823.21	15647.03	15228.60	14320.17	13268.59	10837.85	10068.16	8490.25	6956.93
225.0	15938.83	15872.76	15575.46	14826.69	13918.26	12707.02	10700.76	9327.66	7772.86
270.0	15850.74	15938.83	15784.67	15366.24	14512.87	13301.63	11941.73	10218.47	8649.36
315.0	15916.81	15856.24	15558.94	14656.01	13808.15	12569.38	10873.64	9095.87	7541.63
360.0	15823.21	15812.20	15498.38	14876.24	13852.19	12437.24	10972.74	9216.44	7669.36

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	6050.70	4679.79	3749.34	2978.55	2906.98	2065.72	1798.69	1561.40	1429.26
45.0	5467.10	4211.81	3380.46	2835.40	2223.73	1909.91	1684.18	1487.07	1375.86
90.0	4650.61	3728.97	3041.87	2420.28	2107.01	1799.79	1565.25	1447.98	1346.68
135.0	5852.50	4404.51	3529.12	2890.46	2317.32	1986.43	1744.74	1552.04	1489.34
180.0	5392.22	4149.05	3327.61	2664.73	2230.89	1884.03	1641.23	1484.87	1366.50
225.0	6300.10	4713.93	3743.84	3021.50	2437.90	2030.48	1769.51	1556.99	1419.35
270.0	6937.11	5412.04	4283.39	3419.00	2846.42	2213.82	1894.49	1617.01	1462.85
315.0	6092.54	4552.06	3615.00	2917.99	2305.21	1965.51	1720.51	1522.31	1389.07
360.0	6050.70	4679.79	3749.34	2978.55	2906.98	2065.72	1798.69	1561.40	1429.26

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	1334.02	1260.24	1207.94	1173.25	1140.22	1109.94	1084.61	1054.33	1024.05
45.0	1296.58	1238.22	1189.22	1155.63	1122.60	1091.22	1063.69	1030.11	999.82
90.0	1255.29	1203.53	1167.20	1127.56	1095.62	1068.04	1041.01	1005.61	978.08
135.0	1314.20	1241.52	1191.42	1155.63	1122.05	1093.97	1065.34	1032.86	1003.68
180.0	1262.44	1206.84	1168.30	1127.56	1096.01	1075.31	1050.20	1017.66	992.45
225.0	1308.69	1233.26	1185.91	1145.17	1097.38	1085.99	1059.18	1026.42	997.29
270.0	1351.63	1265.20	1205.18	1164.44	1128.66	1100.03	1076.90	1046.62	1019.09
315.0	1304.84	1237.12	1194.17	1155.63	1098.27	1091.55	1061.71	1029.17	1001.59
360.0	1334.02	1260.24	1207.94	1173.25	1140.22	1109.94	1084.61	1054.33	1024.05

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	991.02	957.98	926.60	894.67	861.08	837.96	806.58	742.16	659.58
45.0	966.79	932.10	897.42	871.54	837.96	817.04	775.19	695.91	616.08
90.0	949.39	914.27	880.19	853.21	827.50	794.79	739.90	665.63	585.86
135.0	973.40	937.06	902.92	874.30	840.71	816.49	787.31	713.53	627.09
180.0	962.39	931.17	893.57	865.32	835.59	810.32	773.16	703.51	628.36
225.0	971.64	935.90	906.83	876.83	847.81	822.98	796.78	735.99	661.50
270.0	987.16	956.33	929.35	896.87	863.83	839.61	818.69	760.33	695.91
315.0	972.68	939.26	907.66	879.58	850.51	825.13	790.17	719.92	632.82
360.0	991.02	957.98	926.60	894.67	861.08	837.96	806.58	742.16	659.58

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	576.99	487.80	376.59	286.84	236.96	120.90	60.56	33.75	27.69
45.0	532.95	438.25	336.39	289.05	183.89	93.87	46.25	31.05	25.77
90.0	491.71	394.37	308.10	216.98	134.56	76.20	39.20	28.46	23.51
135.0	547.81	452.56	367.23	283.54	190.22	111.38	54.45	32.92	27.42
180.0	533.55	436.21	350.54	257.61	170.12	104.77	55.99	32.76	27.69
225.0	570.22	474.37	390.29	294.44	205.14	133.24	74.88	36.12	30.06
270.0	619.94	536.25	425.04	334.19	281.89	160.65	92.05	48.72	31.00
315.0	550.84	455.65	366.90	269.17	181.03	113.58	60.12	31.44	27.25
360.0	576.99	487.80	376.59	286.84	236.96	120.90	60.56	33.75	27.69

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	22.52	18.17	16.19	15.20	14.04	13.43	13.10	12.83	12.55
45.0	20.10	17.12	15.80	14.76	13.65	13.16	12.88	12.66	12.39
90.0	18.66	16.41	15.25	13.93	13.32	12.94	12.72	12.44	12.22
135.0	21.69	16.52	15.42	14.53	13.76	13.16	12.83	12.61	12.33
180.0	21.47	16.46	15.25	14.65	13.82	13.38	13.10	12.77	12.44
225.0	24.61	18.44	15.64	14.87	13.98	13.49	13.10	12.72	12.50
270.0	26.04	20.87	16.63	15.53	14.53	13.71	13.27	12.99	12.72
315.0	22.46	17.29	16.02	15.09	13.93	13.38	13.05	12.77	12.55
360.0	22.52	18.17	16.19	15.20	14.04	13.43	13.10	12.83	12.55
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	12.28	12.11	11.84	11.67	11.51	11.34	11.18	11.07	10.90
45.0	12.17	12.00	11.78	11.56	11.40	11.29	11.12	11.01	10.90
90.0	12.00	11.78	11.62	11.45	11.29	11.18	11.01	10.90	10.79
135.0	12.11	11.95	11.73	11.51	11.40	11.23	11.12	11.01	10.90
180.0	12.22	12.00	11.84	11.62	11.45	11.34	11.18	11.07	11.01
225.0	12.28	12.06	11.89	11.67	11.51	11.34	11.23	11.07	11.01
270.0	12.44	12.28	12.00	11.84	11.62	11.45	11.29	11.18	11.07
315.0	12.28	12.06	11.84	11.62	11.45	11.34	11.18	11.07	10.96
360.0	12.28	12.11	11.84	11.67	11.51	11.34	11.18	11.07	10.90
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	10.85	10.74	10.68	10.57	10.52	10.46	10.41	10.35	10.30
45.0	10.79	10.74	10.63	10.57	10.52	10.46	10.41	10.35	10.30
90.0	10.74	10.63	10.57	10.52	10.46	10.41	10.35	10.30	10.24
135.0	10.85	10.74	10.68	10.57	10.52	10.46	10.41	10.41	10.30
180.0	10.90	10.79	10.74	10.68	10.63	10.52	10.52	10.41	10.41
225.0	10.90	10.85	10.74	10.68	10.57	10.57	10.52	10.41	10.41
270.0	10.96	10.90	10.79	10.74	10.63	10.57	10.52	10.46	10.41
315.0	10.85	10.74	10.68	10.63	10.57	10.52	10.46	10.41	10.35
360.0	10.85	10.74	10.68	10.57	10.52	10.46	10.41	10.35	10.30
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	10.30	10.24	10.19	10.19	10.13	10.13	10.13	10.08	10.08
45.0	10.24	10.24	10.19	10.19	10.13	10.13	10.08	10.08	10.02
90.0	10.24	10.19	10.19	10.13	10.13	10.08	10.08	10.08	10.08
135.0	10.30	10.24	10.24	10.24	10.19	10.19	10.13	10.08	10.08
180.0	10.35	10.30	10.24	10.24	10.24	10.19	10.19	10.13	10.13
225.0	10.35	10.35	10.30	10.24	10.19	10.19	10.19	10.19	10.13
270.0	10.41	10.35	10.30	10.24	10.24	10.24	10.19	10.19	10.13
315.0	10.30	10.30	10.24	10.24	10.19	10.19	10.13	10.13	10.13
360.0	10.30	10.24	10.19	10.19	10.13	10.13	10.13	10.08	10.08
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	10.02	10.02	10.02	10.02	10.02	9.97	9.97	9.91	9.97
45.0	10.08	10.02	10.02	10.02	10.02	9.97	9.97	9.97	9.97
90.0	10.08	10.02	10.02	10.02	10.08	10.02	9.97	9.97	9.97
135.0	10.08	10.08	10.02	10.02	10.08	10.13	9.97	9.91	9.97
180.0	10.08	10.08	10.08	10.08	10.08	10.19	9.97	9.97	9.91
225.0	10.08	10.08	10.08	10.08	10.19	10.13	10.08	9.97	9.91
270.0	10.13	10.08	10.08	10.08	10.13	10.24	10.35	9.97	9.97
315.0	10.08	10.08	10.08	10.02	10.13	10.24	10.02	9.97	9.97
360.0	10.02	10.02	10.02	10.02	10.02	9.97	9.97	9.91	9.97

Intensity data(cd)

C/ γ ($^{\circ}$)	90.0
0.0	9.91
45.0	9.97
90.0	9.97
135.0	9.97
180.0	9.97
225.0	9.97
270.0	9.97
315.0	9.97
360.0	9.91