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Nata

LumCAT: 3-1944-M	
Luminaire: BJB 47.319.2021	
Report No: GC2017062006	Voltage(V): 218.3000
Test No: NT-0010	Current(A): 0.1030
LampCAT: CITIZEN CLU036	Power (W): 20.4000
Lamp flux(lm): 2279.0	PF: 0.9060
Number of Lamps: 1	Ballast type: DC
Length(mm): 86	Width(mm): 86
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 2068.45
Efficiency(%): 90.76%
Lumens(lm)/Power(W): 101.39
Central intensity(cd): 4601.614
Maximum intensity(cd): 4601.614
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=37.7
 [C90/270]Total=37.7
Field angle(10%Imax): [C0/180]Total=67.8
 [C90/270]Total=67.8
Maximum s/h(1/2): C0_180=0.64 C90_270=0.64
Maximum s/h(1/4): C0_180=0.57 C90_270=0.57
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 90.76%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.715%

Equipment: gms1980
Temperature(°C): 25.0

Date: 2017/5/10
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.42

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	4601.614	0.000	0	.000%	.000%
1.0	4598.035	4.402	4.402	.193%	.213%
2.0	4590.052	13.188	17.589	.579%	.850%
3.0	4568.442	21.904	39.494	.961%	1.909%
4.0	4545.181	30.506	70	1.339%	3.384%
5.0	4508.982	38.951	108.95	1.709%	5.267%
6.0	4468.102	47.177	156.127	2.070%	7.548%
7.0	4409.880	55.105	211.233	2.418%	10.212%
8.0	4340.922	62.628	273.861	2.748%	13.240%
9.0	4256.135	69.674	343.535	3.057%	16.608%
10.0	4159.649	76.160	419.695	3.342%	20.290%
11.0	4047.058	82.002	501.697	3.598%	24.255%
12.0	3914.510	87.031	588.728	3.819%	28.462%
13.0	3752.094	90.983	679.711	3.992%	32.861%
14.0	3570.958	93.734	773.446	4.113%	37.392%
15.0	3366.286	95.238	868.683	4.179%	41.997%
16.0	3115.917	94.982	963.666	4.168%	46.589%
17.0	2851.646	92.931	1056.597	4.078%	51.082%
18.0	2556.544	89.169	1145.766	3.913%	55.392%
19.0	2258.964	83.780	1229.546	3.676%	59.443%
20.0	1970.469	77.410	1306.956	3.397%	63.185%
21.0	1693.260	70.351	1377.307	3.087%	66.586%
22.0	1450.186	63.169	1440.476	2.772%	69.640%
23.0	1256.181	56.787	1497.263	2.492%	72.386%
24.0	1114.603	51.834	1549.097	2.274%	74.892%
25.0	960.321	47.179	1596.276	2.070%	77.172%
26.0	907.302	44.085	1640.362	1.934%	79.304%
27.0	844.249	42.852	1683.214	1.880%	81.375%
28.0	799.763	41.623	1724.837	1.826%	83.388%
29.0	756.558	40.718	1765.554	1.787%	85.356%
30.0	714.068	39.707	1805.261	1.742%	87.276%
31.0	669.403	38.500	1843.761	1.689%	89.137%
32.0	602.689	36.444	1880.205	1.599%	90.899%
33.0	531.060	33.401	1913.606	1.466%	92.514%
34.0	452.082	29.753	1943.358	1.306%	93.952%
35.0	352.512	24.988	1968.346	1.096%	95.160%
36.0	260.114	19.506	1987.852	.856%	96.103%
37.0	191.638	14.734	2002.586	.646%	96.816%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	113.196	10.175	2012.761	.446%	97.308%
39.0	65.737	6.107	2018.868	.268%	97.603%
40.0	39.269	3.662	2022.53	.161%	97.780%
41.0	22.284	2.192	2024.722	.096%	97.886%
42.0	16.393	1.405	2026.128	.062%	97.954%
43.0	14.342	1.139	2027.266	.050%	98.009%
44.0	12.980	1.031	2028.297	.045%	98.059%
45.0	11.851	0.954	2029.252	.042%	98.105%
46.0	11.135	0.899	2030.15	.039%	98.148%
47.0	10.461	0.859	2031.009	.038%	98.190%
48.0	10.185	0.835	2031.844	.037%	98.230%
49.0	10.007	0.829	2032.673	.036%	98.270%
50.0	9.841	0.828	2033.501	.036%	98.310%
51.0	9.731	0.828	2034.329	.036%	98.350%
52.0	9.607	0.830	2035.159	.036%	98.390%
53.0	9.511	0.832	2035.99	.036%	98.431%
54.0	9.387	0.833	2036.823	.037%	98.471%
55.0	9.291	0.834	2037.657	.037%	98.511%
56.0	9.194	0.835	2038.492	.037%	98.552%
57.0	9.139	0.838	2039.331	.037%	98.592%
58.0	9.084	0.843	2040.173	.037%	98.633%
59.0	9.029	0.847	2041.02	.037%	98.674%
60.0	8.960	0.850	2041.87	.037%	98.715%
61.0	8.878	0.851	2042.721	.037%	98.756%
62.0	8.823	0.853	2043.574	.037%	98.797%
63.0	8.781	0.856	2044.43	.038%	98.839%
64.0	8.754	0.860	2045.291	.038%	98.880%
65.0	8.699	0.864	2046.155	.038%	98.922%
66.0	8.685	0.867	2047.022	.038%	98.964%
67.0	8.616	0.870	2047.892	.038%	99.006%
68.0	8.616	0.873	2048.765	.038%	99.048%
69.0	8.589	0.878	2049.643	.039%	99.091%
70.0	8.548	0.880	2050.523	.039%	99.133%
71.0	8.492	0.881	2051.403	.039%	99.176%
72.0	8.479	0.882	2052.286	.039%	99.218%
73.0	8.451	0.885	2053.171	.039%	99.261%
74.0	8.451	0.889	2054.06	.039%	99.304%
75.0	8.437	0.892	2054.952	.039%	99.347%

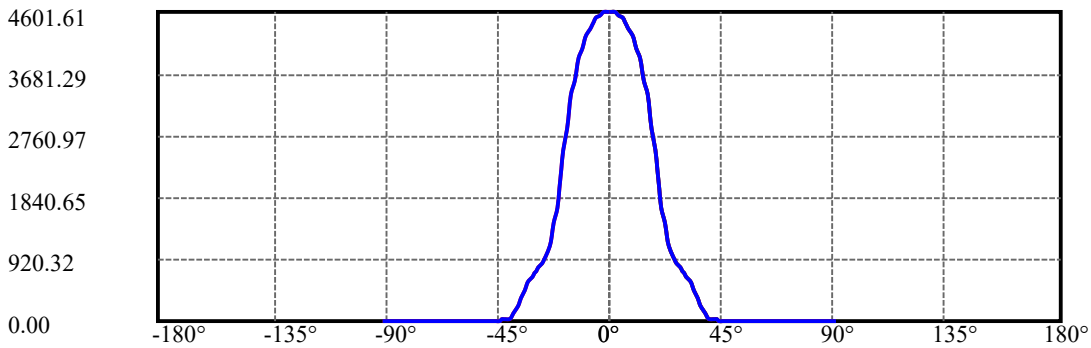
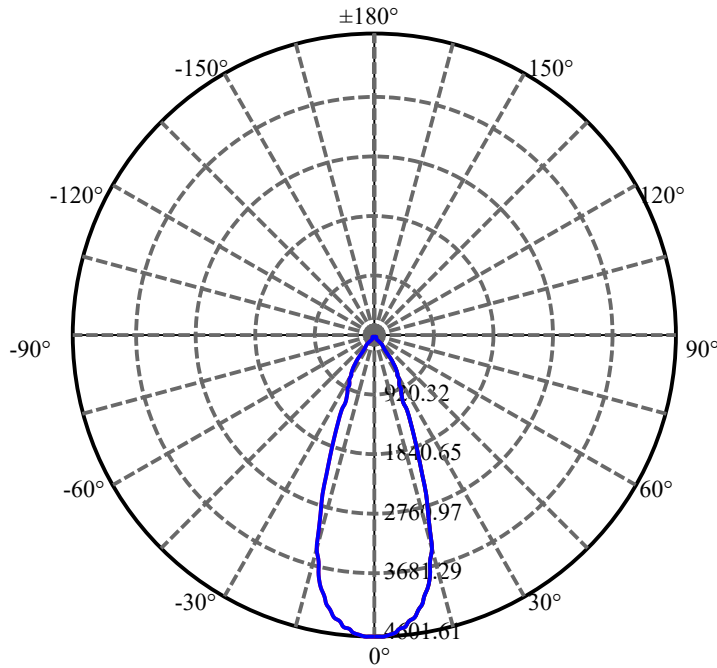
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	8.410	0.894	2055.846	.039%	99.391%
77.0	8.382	0.895	2056.742	.039%	99.434%
78.0	8.314	0.894	2057.635	.039%	99.477%
79.0	8.327	0.894	2058.53	.039%	99.520%
80.0	8.327	0.898	2059.427	.039%	99.564%
81.0	8.327	0.901	2060.328	.040%	99.607%
82.0	8.300	0.902	2061.23	.040%	99.651%
83.0	8.314	0.903	2062.133	.040%	99.694%
84.0	8.258	0.903	2063.036	.040%	99.738%
85.0	8.272	0.902	2063.938	.040%	99.782%
86.0	8.231	0.902	2064.84	.040%	99.825%
87.0	8.231	0.901	2065.741	.040%	99.869%
88.0	8.258	0.903	2066.644	.040%	99.913%
89.0	8.245	0.905	2067.549	.040%	99.956%
90.0	8.245	0.904	2068.453	.040%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1805.26	79.21%	87.28%
0-40	2022.53	88.75%	97.78%
0-60	2041.87	89.59%	98.71%
0-90	2067.55	90.72%	99.96%
0-120	2067.55	90.72%	99.96%
0-180	2068.45	90.76%	100.00%
60-90	26.53	1.16%	1.28%
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%
0-26.34	1654.76	72.61%	80.00%

ZONAL LUMEN SUMMARY

0-10	419.69
10-20	887.26
20-30	498.30
30-40	217.27
40-50	10.97
50-60	8.37
60-70	8.65
70-80	8.90
80-90	8.12
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: —————

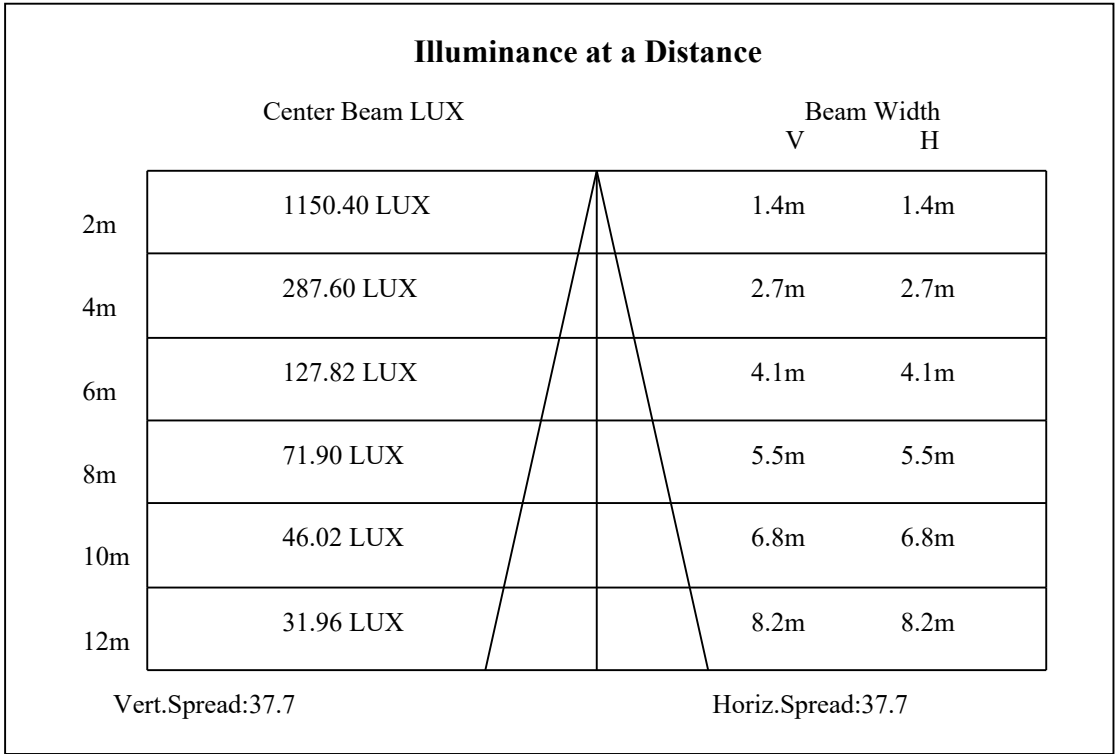
C90/C270: —————

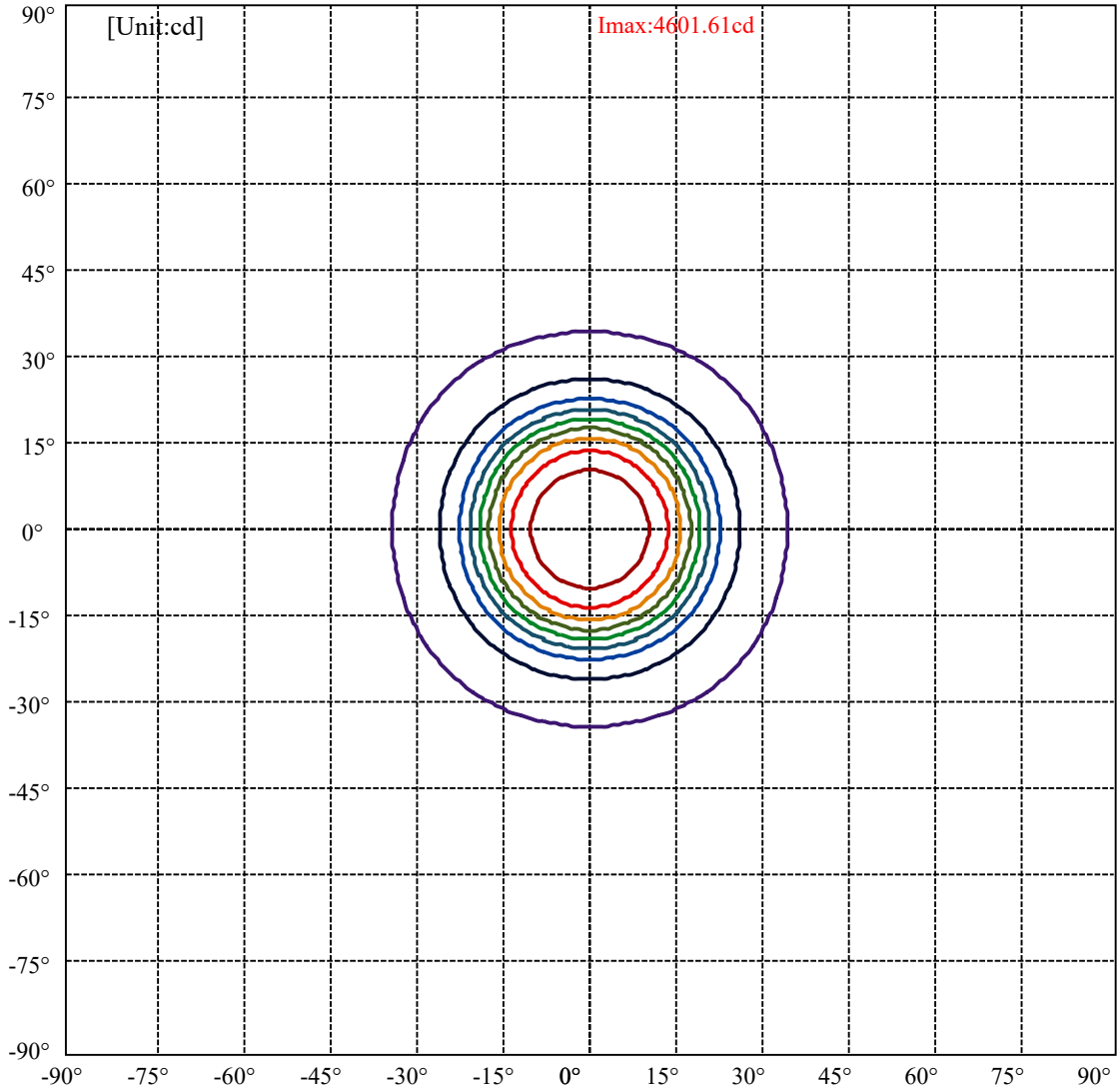
Field angle(10%Imax):C0/180Left:33.9 Right:33.9

:C90/270Left:33.9 Right:33.9

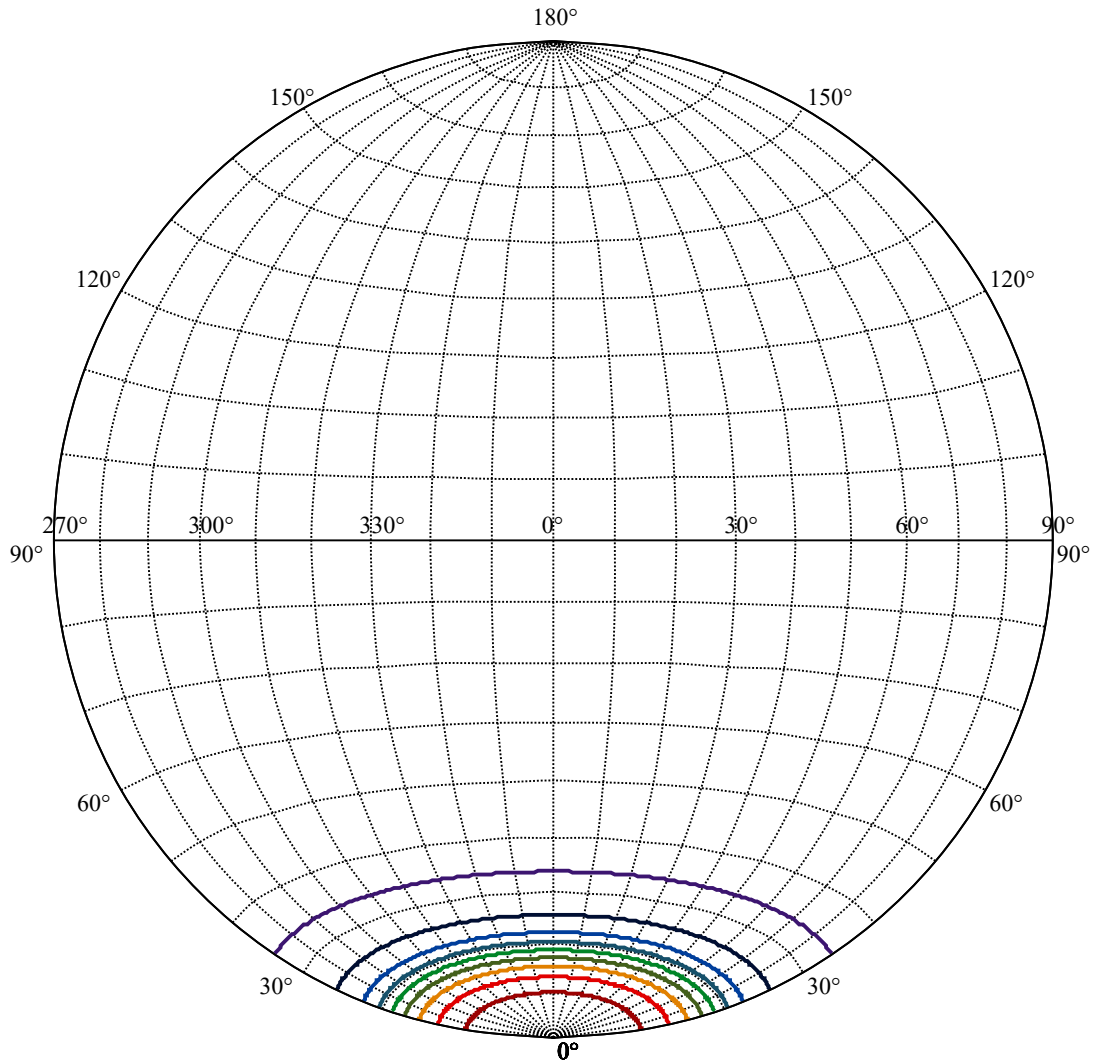
Beam Angle(50%Imax):C0/180Left:18.9 Right:18.9

:C90/270Left:18.9 Right:18.9





(10%Imax) 460.161	—
(20%Imax) 920.323	—
(30%Imax) 1380.48	—
(40%Imax) 1840.65	—
(50%Imax) 2300.81	—
(60%Imax) 2760.97	—
(70%Imax) 3221.13	—
(80%Imax) 3681.29	—
(90%Imax) 4141.45	—



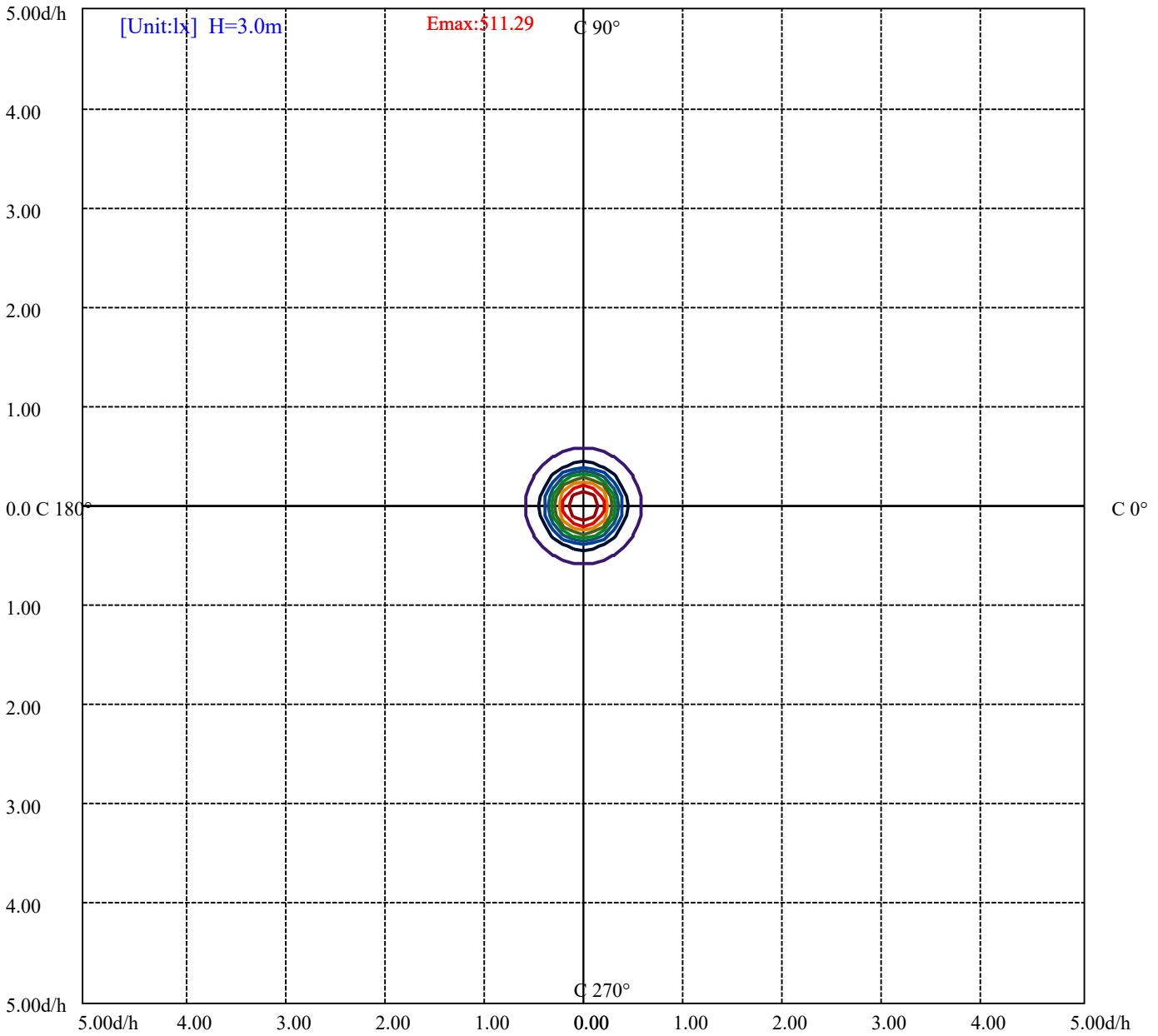
House

[Unit:cd]

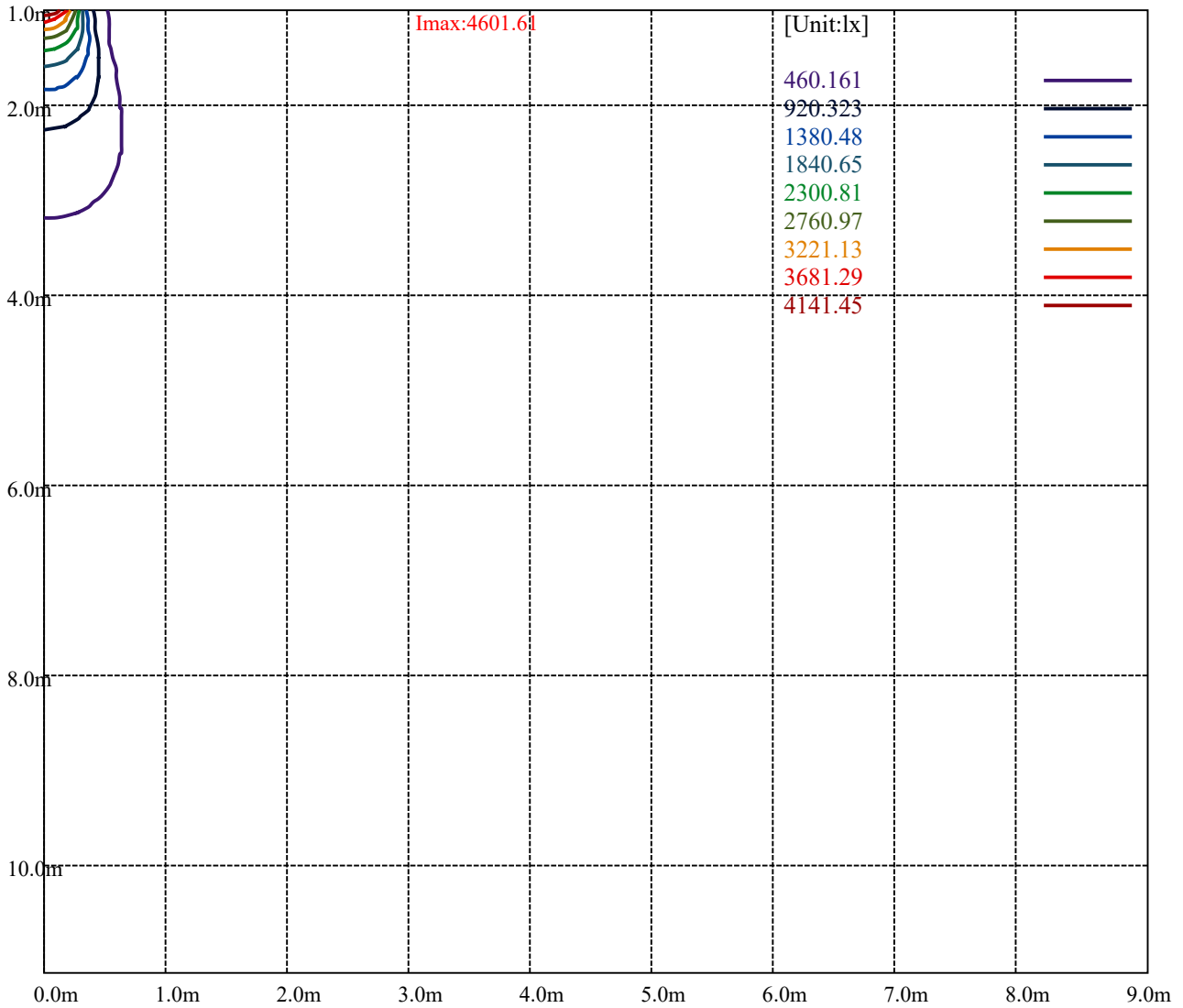
Road

Imax:4601.61

(10%Imax)	460.161	—
(20%Imax)	920.323	—
(30%Imax)	1380.48	—
(40%Imax)	1840.65	—
(50%Imax)	2300.81	—
(60%Imax)	2760.97	—
(70%Imax)	3221.13	—
(80%Imax)	3681.29	—
(90%Imax)	4141.45	—



- (10%Emax) 51.129
- (20%Emax) 102.2581
- (30%Emax) 153.3867
- (40%Emax) 204.5167
- (50%Emax) 255.6456
- (60%Emax) 306.7744
- (70%Emax) 357.9033
- (80%Emax) 409.0322
- (90%Emax) 460.1611



Luminance Table

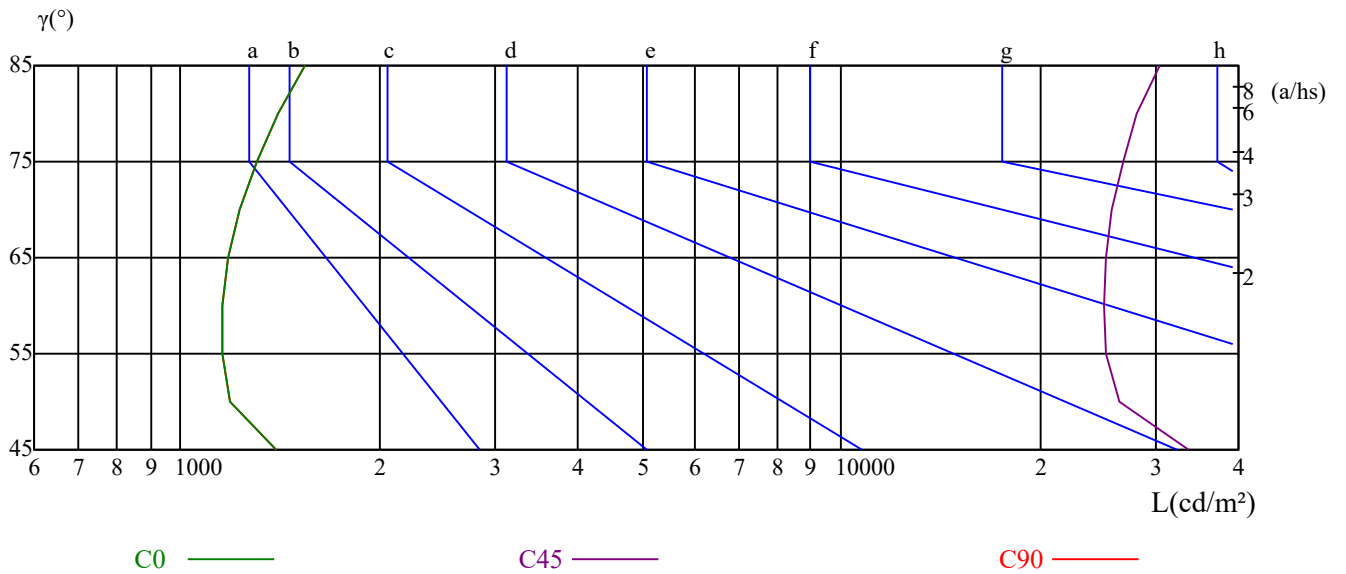
γ	45	50	55	60	65	70	75	80	85
C0	1398	1187	1155	1158	1181	1231	1305	1401	1540
C45	33591	26387	25263	24973	25160	25736	26728	28134	30358
C90	1398	1187	1155	1158	1181	1231	1305	1401	1540

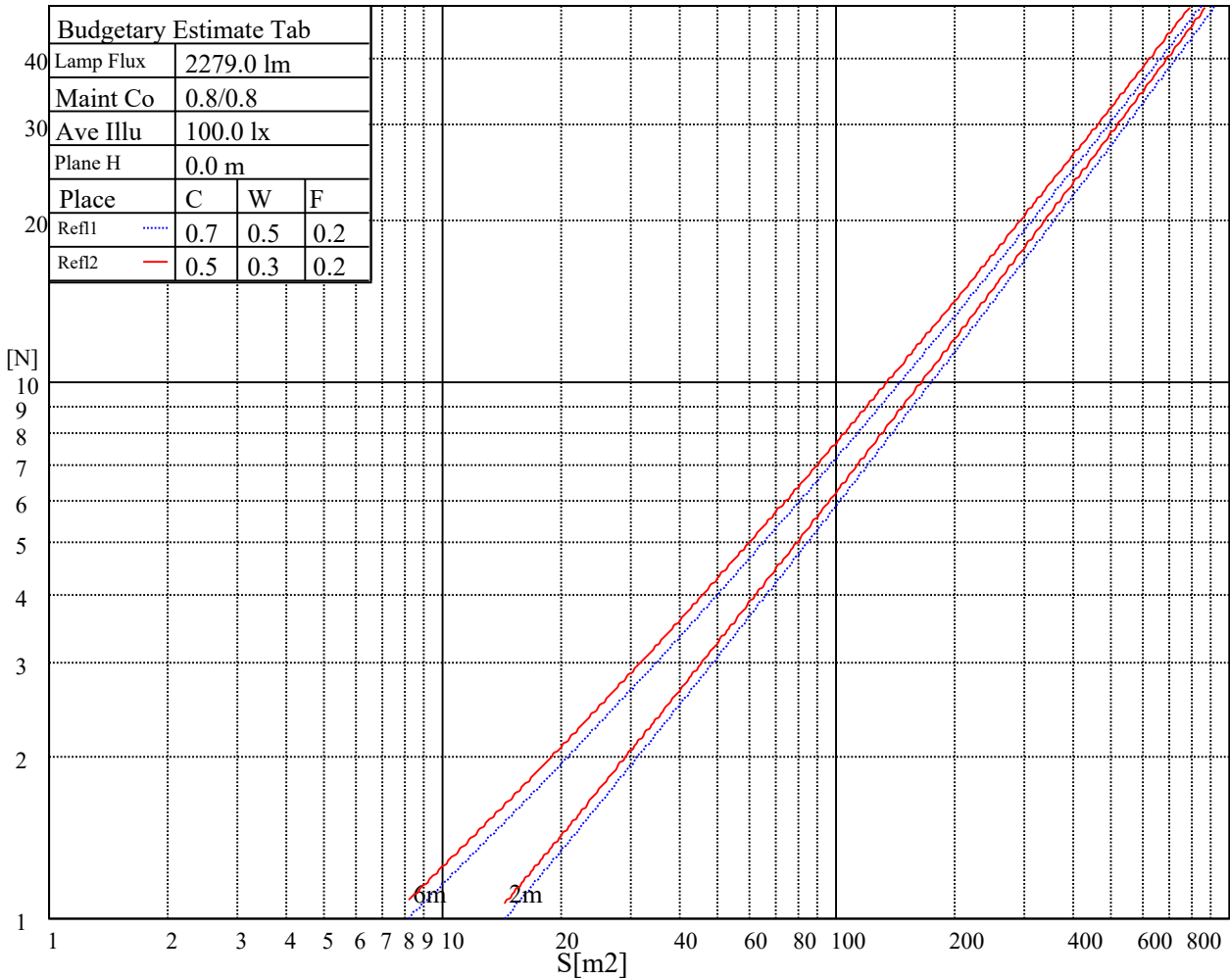
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
2849	2849	75433	4512	4512	119665	13137	13137	353654

Glare Table

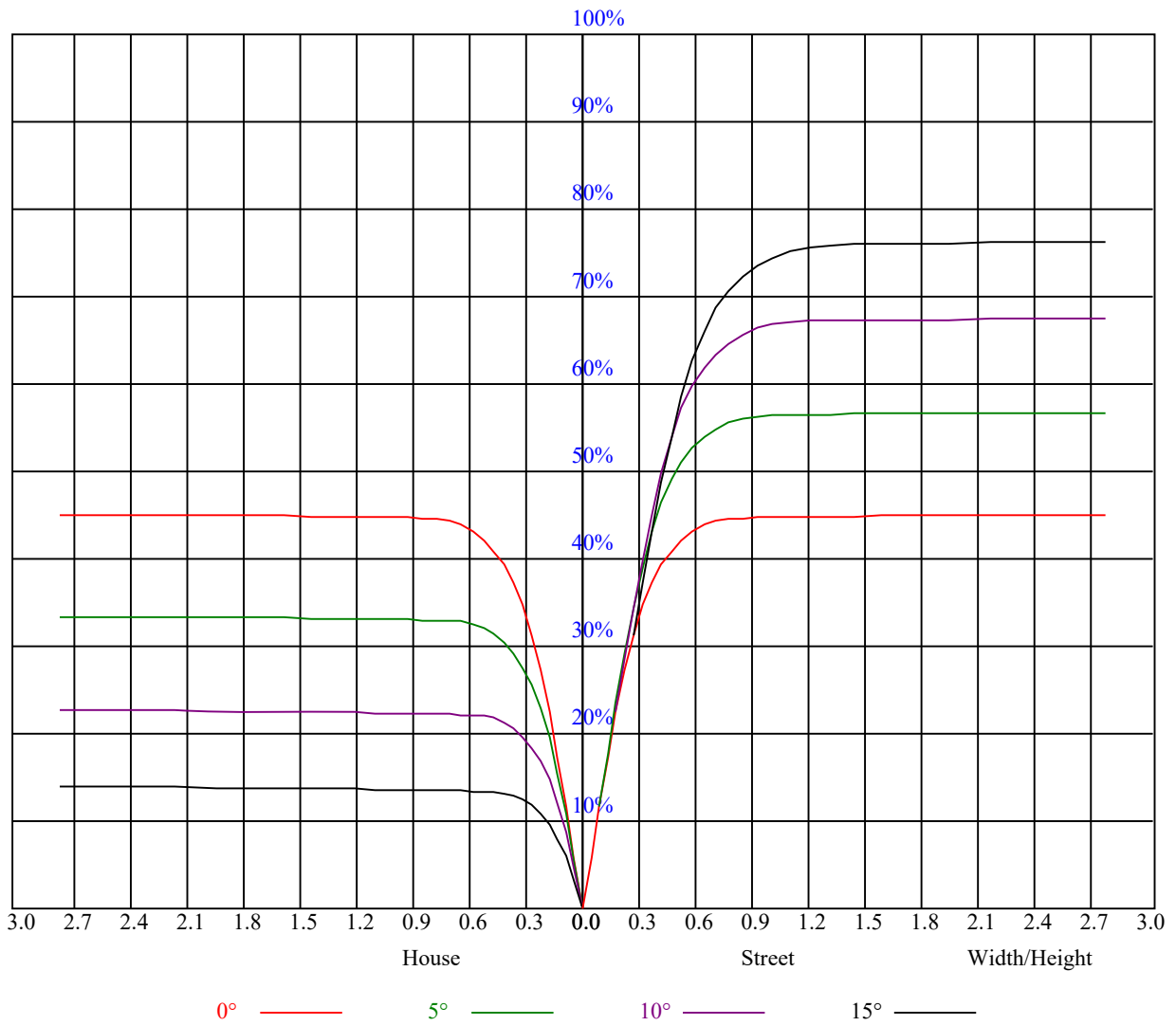
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	1.08	1.08	1.08	1.06	1.06	1.06	1.01	1.01	1.01	0.97	0.97	0.97	0.93	0.93	0.93	0.91
1	1.01	0.99	0.97	0.99	0.98	0.96	0.96	0.94	0.93	0.92	0.91	0.90	0.89	0.88	0.88	0.86
2	0.96	0.92	0.90	0.94	0.91	0.89	0.91	0.89	0.87	0.89	0.87	0.85	0.86	0.85	0.83	0.82
3	0.90	0.87	0.84	0.89	0.86	0.83	0.87	0.84	0.82	0.85	0.82	0.80	0.83	0.81	0.79	0.78
4	0.86	0.82	0.78	0.85	0.81	0.78	0.83	0.80	0.77	0.81	0.79	0.76	0.80	0.77	0.75	0.74
5	0.82	0.77	0.74	0.81	0.77	0.74	0.80	0.76	0.73	0.78	0.75	0.73	0.77	0.74	0.72	0.71
6	0.78	0.74	0.70	0.77	0.73	0.70	0.76	0.72	0.70	0.75	0.72	0.69	0.74	0.71	0.69	0.68
7	0.75	0.70	0.67	0.74	0.70	0.67	0.73	0.69	0.67	0.72	0.69	0.66	0.71	0.68	0.66	0.65
8	0.72	0.67	0.64	0.71	0.67	0.64	0.70	0.66	0.64	0.69	0.66	0.63	0.69	0.65	0.63	0.62
9	0.69	0.64	0.61	0.68	0.64	0.61	0.68	0.64	0.61	0.67	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	0.58	0.64	0.61	0.58	0.57



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	4586.20	4554.27	4514.62	4466.18	4420.48	4356.06	4278.43	4193.10	4100.60
90.0	4617.03	4615.93	4612.63	4595.56	4578.49	4544.36	4512.42	4465.07	4403.41
180.0	4586.20	4612.07	4639.05	4643.46	4642.36	4637.40	4628.04	4586.20	4541.60
270.0	4617.03	4609.87	4593.91	4568.58	4539.40	4498.11	4453.51	4395.15	4318.07
360.0	4586.20	4554.27	4514.62	4466.18	4420.48	4356.06	4278.43	4193.10	4100.60
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	3977.27	3866.06	3730.62	3553.34	3339.72	3125.55	2834.85	2508.37	2207.76
90.0	4316.42	4228.33	4121.52	3976.17	3815.96	3634.27	3447.63	3210.34	2925.70
180.0	4493.70	4409.47	4327.98	4240.44	4109.96	3997.09	3863.31	3664.00	3497.73
270.0	4237.14	4134.74	4008.11	3888.08	3742.73	3526.91	3319.35	3080.96	2775.39
360.0	3977.27	3866.06	3730.62	3553.34	3339.72	3125.55	2834.85	2508.37	2207.76
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	1891.19	1639.03	1397.33	1222.25	1071.40	970.64	879.80	826.40	785.10
90.0	2643.81	2344.85	2013.41	1708.95	1463.95	1281.16	1095.07	989.36	914.49
180.0	3242.82	2901.47	2636.65	2282.09	1912.66	1680.32	1449.08	1091.33	1076.24
270.0	2448.36	2150.50	1834.48	1559.75	1352.74	1092.59	1034.45	934.20	853.37
360.0	1891.19	1639.03	1397.33	1222.25	1071.40	970.64	879.80	826.40	785.10
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	747.12	723.99	689.86	608.37	526.89	438.80	339.70	284.09	161.81
90.0	844.57	801.62	769.14	741.06	713.53	662.33	578.64	477.34	383.19
180.0	974.50	899.46	830.09	789.62	758.79	728.78	700.65	632.71	551.22
270.0	810.82	773.98	737.15	717.22	678.40	580.85	505.25	414.19	313.82
360.0	747.12	723.99	689.86	608.37	526.89	438.80	339.70	284.09	161.81
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	87.48	35.57	21.69	18.72	15.86	14.04	12.61	11.56	11.01
90.0	282.99	229.97	101.41	42.34	22.41	18.22	15.53	13.87	12.55
180.0	453.39	366.13	267.46	175.80	98.66	39.37	21.91	18.11	15.69
270.0	216.59	134.89	62.21	26.10	20.15	17.51	15.53	13.82	12.66
360.0	87.48	35.57	21.69	18.72	15.86	14.04	12.61	11.56	11.01
C/γ(°)	45.0	46.0	47.0	48.0	49.0	50.0	51.0	52.0	53.0
0.0	10.46	10.24	10.08	9.91	9.74	9.63	9.58	9.41	9.36
90.0	11.40	10.57	10.35	10.13	10.02	9.86	9.74	9.63	9.58
180.0	13.82	12.50	11.07	10.52	10.24	10.02	9.86	9.74	9.58
270.0	11.73	11.23	10.35	10.19	10.02	9.86	9.74	9.63	9.52
360.0	10.46	10.24	10.08	9.91	9.74	9.63	9.58	9.41	9.36
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	9.25	9.14	9.03	8.97	8.97	8.92	8.86	8.75	8.70
90.0	9.41	9.36	9.25	9.25	9.19	9.14	9.03	8.97	8.92
180.0	9.47	9.36	9.25	9.14	9.08	9.03	8.97	8.86	8.81
270.0	9.41	9.30	9.25	9.19	9.08	9.03	8.97	8.92	8.86
360.0	9.25	9.14	9.03	8.97	8.97	8.92	8.86	8.75	8.70
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	8.64	8.64	8.59	8.53	8.48	8.48	8.48	8.48	8.37
90.0	8.86	8.86	8.81	8.81	8.70	8.70	8.70	8.64	8.64
180.0	8.75	8.70	8.64	8.64	8.59	8.59	8.53	8.48	8.42
270.0	8.86	8.81	8.75	8.75	8.70	8.70	8.64	8.59	8.53
360.0	8.64	8.64	8.59	8.53	8.48	8.48	8.48	8.48	8.37

Nata 3-1944-M

Intensity data(cd)										Appendix Page: 17 Total:17
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0	
0.0	8.37	8.31	8.31	8.31	8.31	8.31	8.20	8.20	8.20	
90.0	8.59	8.59	8.53	8.53	8.53	8.48	8.42	8.42	8.42	
180.0	8.42	8.37	8.42	8.37	8.31	8.31	8.26	8.26	8.26	
270.0	8.53	8.53	8.53	8.53	8.48	8.42	8.37	8.42	8.42	
360.0	8.37	8.31	8.31	8.31	8.31	8.31	8.20	8.20	8.20	
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0	
0.0	8.26	8.20	8.26	8.20	8.20	8.09	8.15	8.15	8.15	
90.0	8.42	8.42	8.37	8.37	8.37	8.31	8.31	8.37	8.31	
180.0	8.20	8.20	8.20	8.15	8.15	8.15	8.09	8.15	8.15	
270.0	8.42	8.37	8.42	8.31	8.37	8.37	8.37	8.37	8.37	
360.0	8.26	8.20	8.26	8.20	8.20	8.09	8.15	8.15	8.15	
C/γ(°)	90.0									
0.0	8.15									
90.0	8.31									
180.0	8.15									
270.0	8.37									
360.0	8.15									