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NATA

LumCAT: 2-1284-N
Luminaire: 92.70.064.00
Report No: NATA0100
Test No: GC2019032608
LampCAT: BRIDGELUX V10
Lamp flux(lm): 1520.0
Number of Lamps: 1
Length(mm): 57
Phm Type: C

Voltage(V): 34.8000
Current(A): 0.3000
Power (W): 10.4400
PF: 0.0000
Ballast type: DC
Width(mm): 57
Height(mm): 0

Photometric Results

Lumens(lm): 1245.82
Efficiency(%): 81.96%
Lumens(lm)/Power(W): 119.33
Central intensity(cd): 4205.039
Maximum intensity(cd): 4205.039
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=22.8
[C90/270]Total=22.8
Field angle(10%Imax): [C0/180]Total=62.3
[C90/270]Total=62.3
Maximum s/h(1/2): C0_180=0.38 C90_270=0.38
Maximum s/h(1/4): C0_180=0.44 C90_270=0.44
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 81.96%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 97.741%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	4205.039	0.000	0	.000%	.000%
1.0	4182.891	4.013	4.013	.264%	.322%
2.0	4121.297	11.919	15.932	.784%	1.279%
3.0	4015.898	19.461	35.394	1.280%	2.841%
4.0	3872.039	26.403	61.797	1.737%	4.960%
5.0	3681.141	32.493	94.291	2.138%	7.569%
6.0	3465.422	37.557	131.848	2.471%	10.583%
7.0	3218.063	41.484	173.332	2.729%	13.913%
8.0	2964.656	44.249	217.581	2.911%	17.465%
9.0	2701.477	45.921	263.502	3.021%	21.151%
10.0	2432.250	46.458	309.96	3.056%	24.880%
11.0	2190.797	46.194	356.154	3.039%	28.588%
12.0	1976.977	45.560	401.713	2.997%	32.245%
13.0	1776.445	44.544	446.257	2.931%	35.820%
14.0	1600.734	43.228	489.485	2.844%	39.290%
15.0	1466.719	42.111	531.596	2.770%	42.670%
16.0	1338.750	41.108	572.704	2.704%	45.970%
17.0	1219.029	39.831	612.535	2.620%	49.167%
18.0	1127.890	38.696	651.231	2.546%	52.273%
19.0	1053.907	37.959	689.19	2.497%	55.320%
20.0	980.311	37.232	726.422	2.449%	58.309%
21.0	914.463	36.384	762.805	2.394%	61.229%
22.0	858.263	35.624	798.429	2.344%	64.089%
23.0	808.474	34.973	833.402	2.301%	66.896%
24.0	764.508	34.391	867.793	2.263%	69.656%
25.0	720.373	33.763	901.556	2.221%	72.366%
26.0	681.518	33.092	934.647	2.177%	75.023%
27.0	641.644	32.371	967.019	2.130%	77.621%
28.0	599.091	31.413	998.432	2.067%	80.142%
29.0	549.844	30.059	1028.491	1.978%	82.555%
30.0	496.695	28.256	1056.747	1.859%	84.823%
31.0	429.961	25.787	1082.535	1.697%	86.893%
32.0	356.280	22.525	1105.06	1.482%	88.701%
33.0	298.209	19.282	1124.341	1.269%	90.249%
34.0	226.547	15.881	1140.222	1.045%	91.524%
35.0	168.272	12.262	1152.483	.807%	92.508%
36.0	113.759	8.980	1161.463	.591%	93.229%
37.0	80.360	6.331	1167.794	.417%	93.737%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	59.168	4.657	1172.452	.306%	94.111%
39.0	46.280	3.599	1176.051	.237%	94.400%
40.0	39.860	3.004	1179.055	.198%	94.641%
41.0	35.866	2.697	1181.752	.177%	94.857%
42.0	32.695	2.491	1184.243	.164%	95.057%
43.0	30.030	2.324	1186.566	.153%	95.244%
44.0	28.104	2.194	1188.76	.144%	95.420%
45.0	26.360	2.093	1190.853	.138%	95.588%
46.0	24.933	2.006	1192.859	.132%	95.749%
47.0	23.801	1.938	1194.798	.128%	95.904%
48.0	22.901	1.888	1196.686	.124%	96.056%
49.0	22.134	1.849	1198.535	.122%	96.204%
50.0	21.614	1.824	1200.359	.120%	96.351%
51.0	21.248	1.813	1202.172	.119%	96.496%
52.0	20.918	1.809	1203.982	.119%	96.642%
53.0	20.552	1.804	1205.786	.119%	96.786%
54.0	20.138	1.793	1207.579	.118%	96.930%
55.0	19.680	1.777	1209.357	.117%	97.073%
56.0	19.111	1.753	1211.11	.115%	97.214%
57.0	18.401	1.715	1212.825	.113%	97.351%
58.0	17.655	1.667	1214.492	.110%	97.485%
59.0	16.952	1.618	1216.11	.106%	97.615%
60.0	16.200	1.566	1217.676	.103%	97.741%
61.0	15.462	1.511	1219.187	.099%	97.862%
62.0	14.794	1.458	1220.645	.096%	97.979%
63.0	14.154	1.408	1222.053	.093%	98.092%
64.0	13.500	1.357	1223.41	.089%	98.201%
65.0	12.930	1.308	1224.718	.086%	98.306%
66.0	12.396	1.264	1225.982	.083%	98.407%
67.0	11.946	1.224	1227.206	.081%	98.506%
68.0	11.609	1.193	1228.399	.079%	98.602%
69.0	10.983	1.153	1229.551	.076%	98.694%
70.0	10.209	1.088	1230.64	.072%	98.781%
71.0	9.577	1.023	1231.662	.067%	98.863%
72.0	9.113	0.972	1232.634	.064%	98.941%
73.0	8.754	0.934	1233.568	.061%	99.016%
74.0	8.480	0.906	1234.474	.060%	99.089%
75.0	8.213	0.882	1235.356	.058%	99.160%

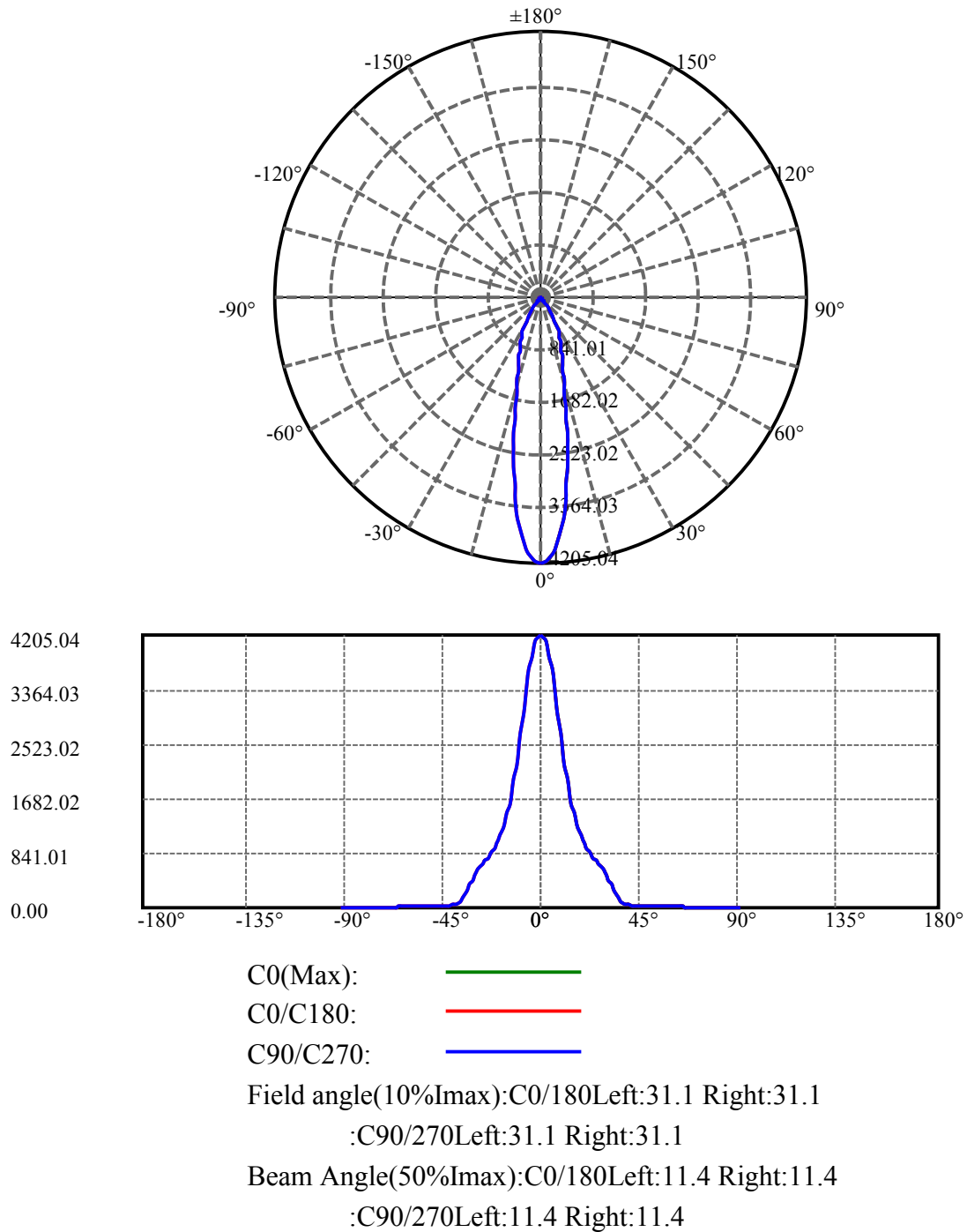
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	7.931	0.857	1236.213	.056%	99.229%
77.0	7.699	0.833	1237.047	.055%	99.296%
78.0	7.432	0.810	1237.857	.053%	99.361%
79.0	7.228	0.788	1238.644	.052%	99.424%
80.0	6.975	0.766	1239.41	.050%	99.485%
81.0	6.729	0.741	1240.151	.049%	99.545%
82.0	6.511	0.718	1240.869	.047%	99.602%
83.0	6.286	0.696	1241.565	.046%	99.658%
84.0	6.082	0.674	1242.238	.044%	99.712%
85.0	5.871	0.652	1242.891	.043%	99.765%
86.0	5.681	0.631	1243.522	.042%	99.815%
87.0	5.386	0.606	1244.128	.040%	99.864%
88.0	5.203	0.580	1244.708	.038%	99.911%
89.0	5.070	0.563	1245.271	.037%	99.956%
90.0	4.964	0.550	1245.821	.036%	100.000%

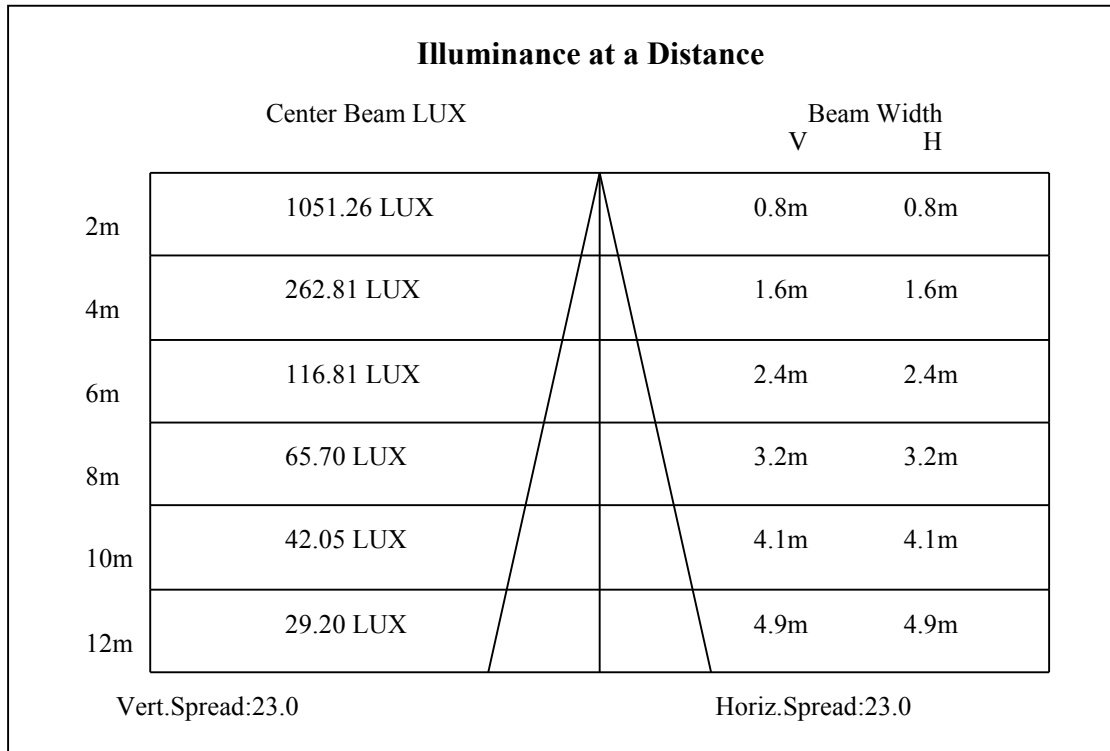
ZONAL LUMEN SUMMARY

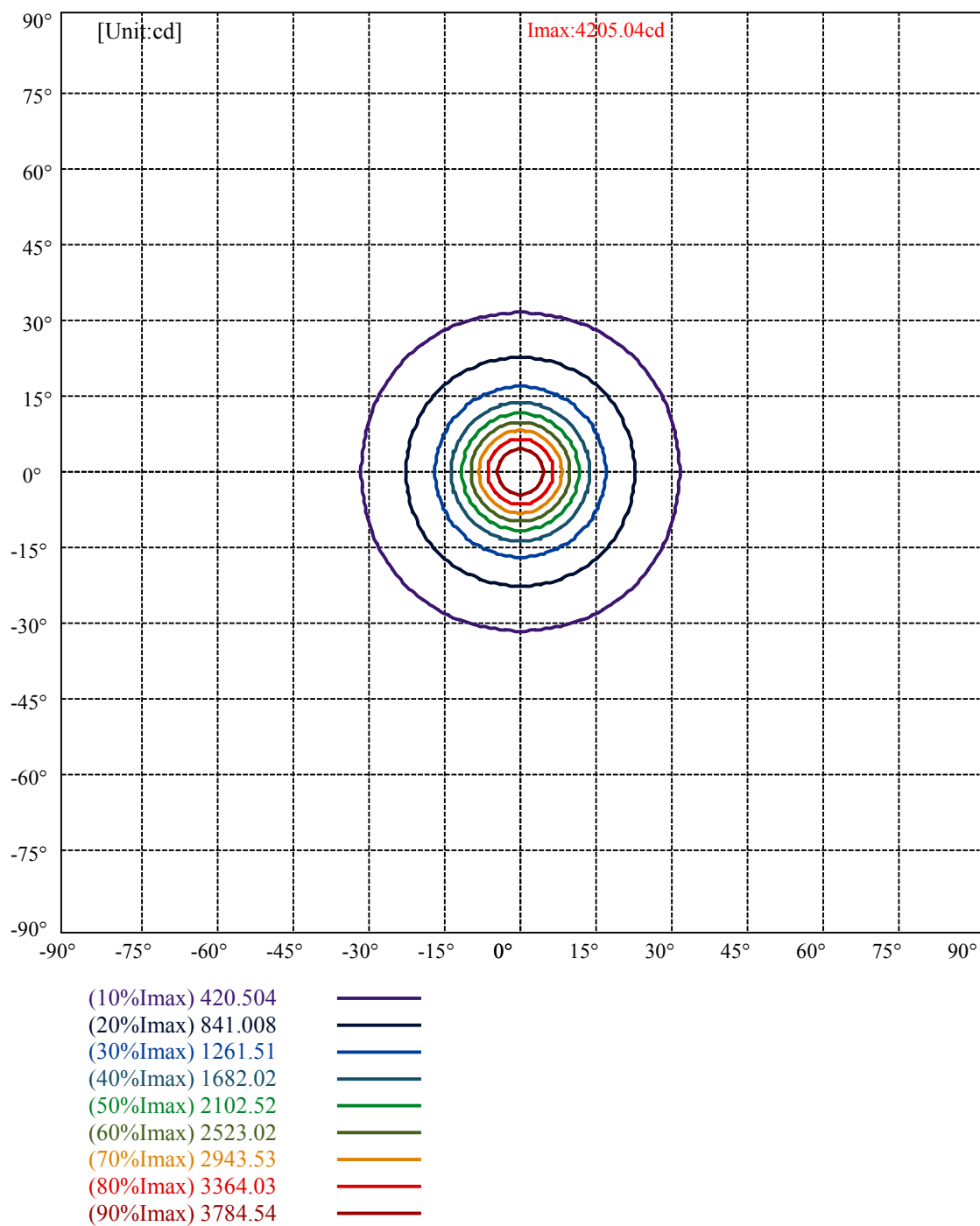
Zone	Lumens	%Lamp	%Fixt
0-30	1056.75	69.52%	84.82%
0-40	1179.06	77.57%	94.64%
0-60	1217.68	80.11%	97.74%
0-90	1245.27	81.93%	99.96%
0-120	1245.27	81.93%	99.96%
0-180	1245.82	81.96%	100.00%
60-90	29.16	1.92%	2.34%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-27.94	996.66	65.57%	80.00%

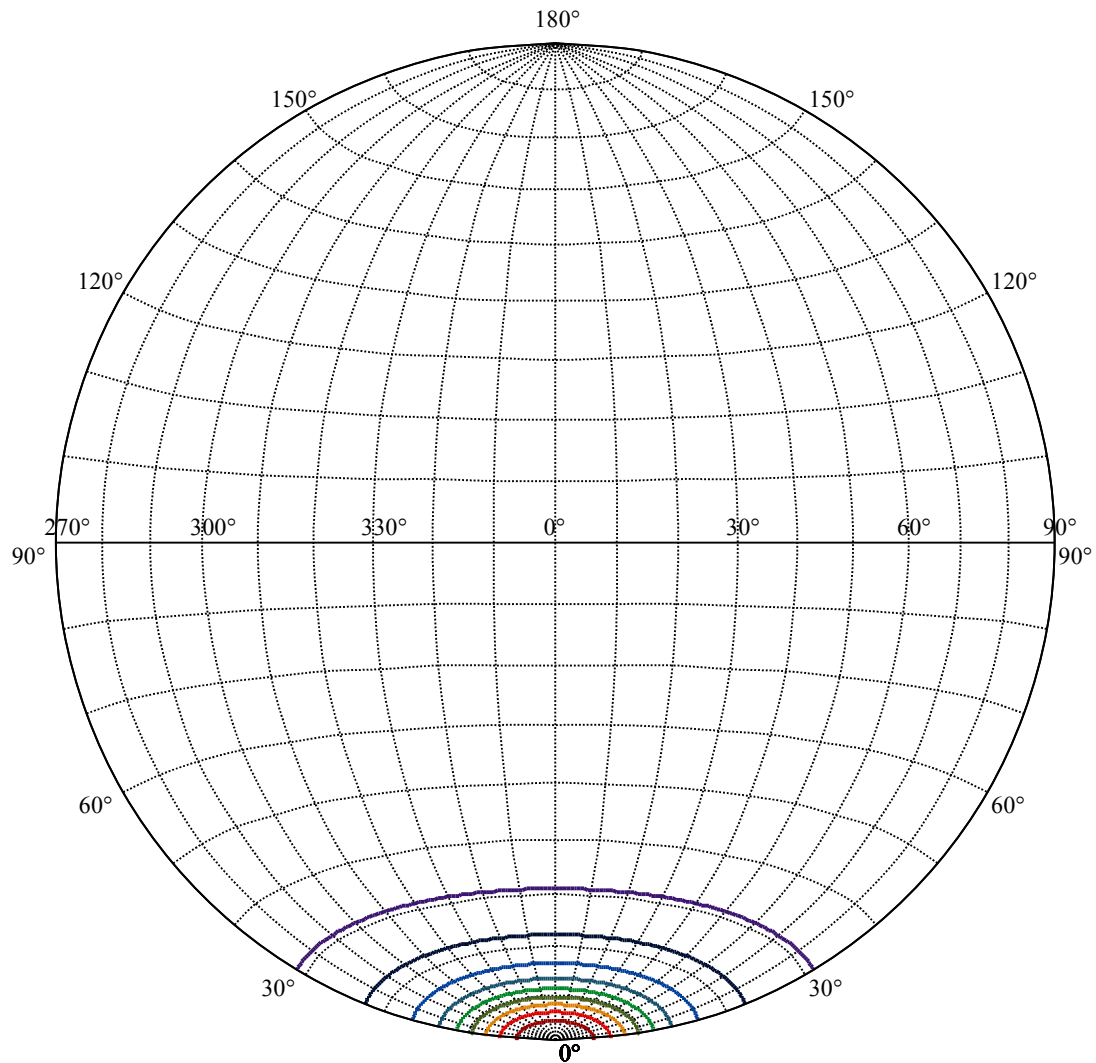
ZONAL LUMEN SUMMARY

0-10	309.96
10-20	416.46
20-30	330.33
30-40	122.31
40-50	21.30
50-60	17.32
60-70	12.96
70-80	8.77
80-90	5.86
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









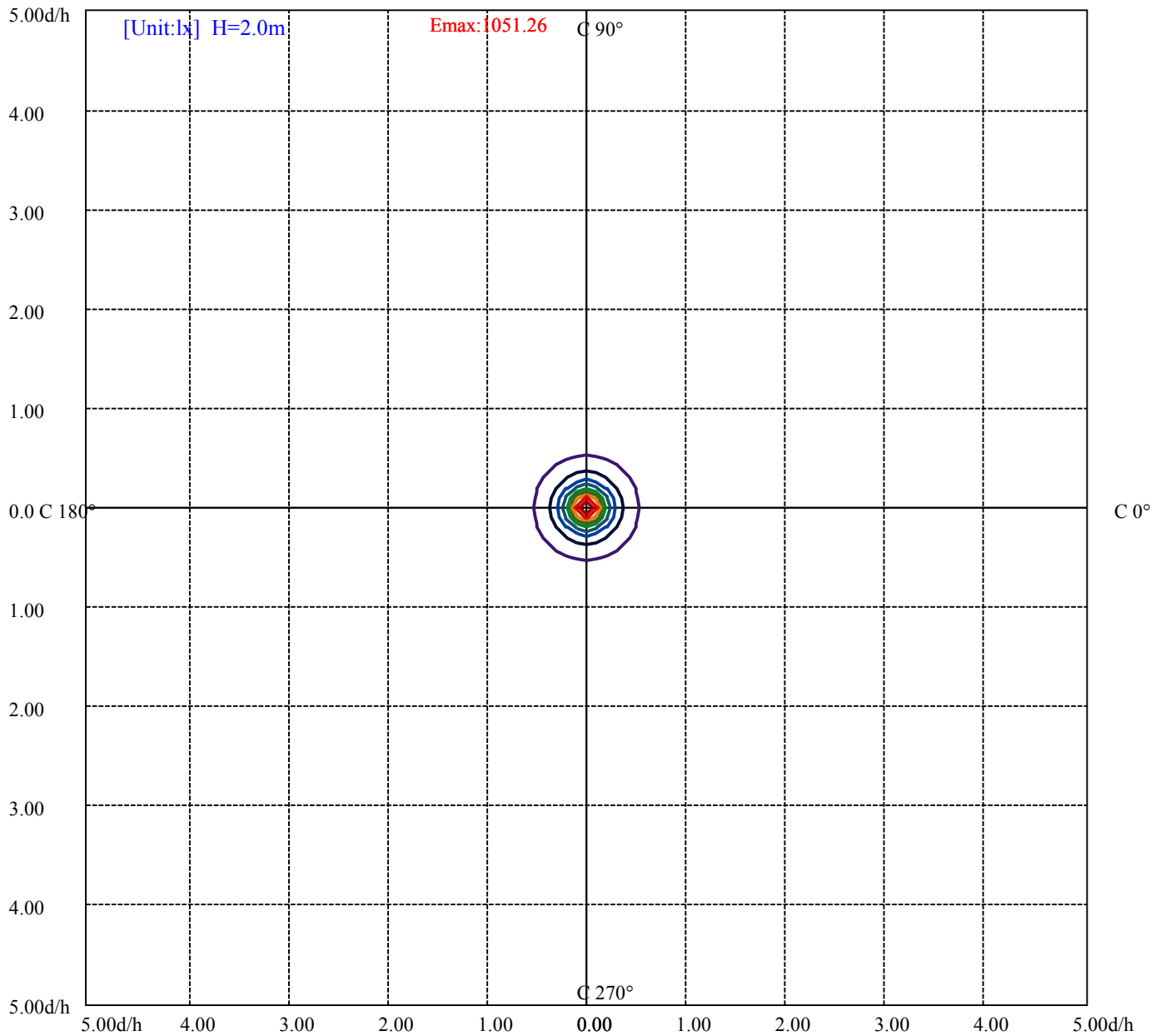
House

[Unit:cd]

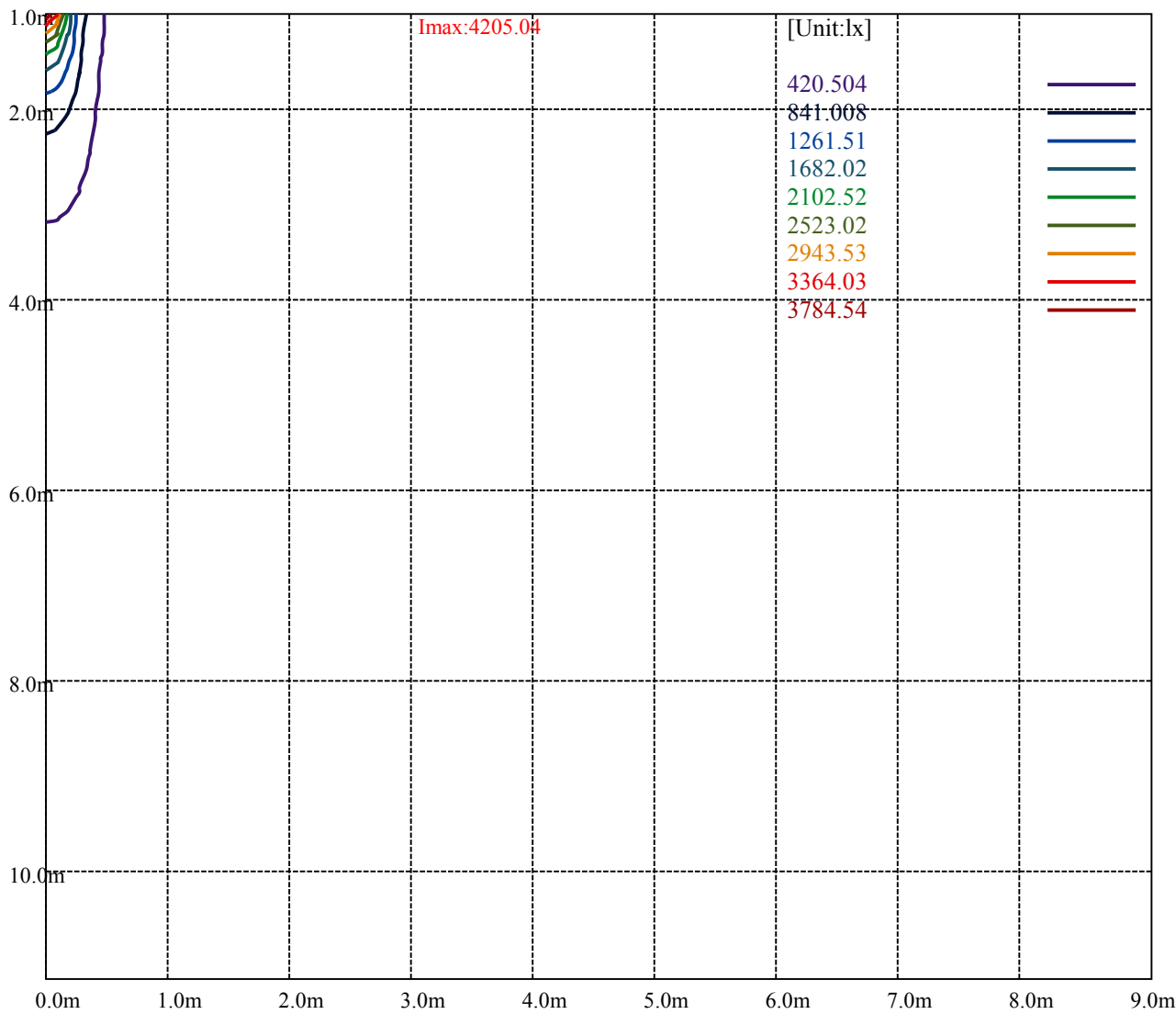
Road

Imax:4205.04

(10%Imax)	420.504	—
(20%Imax)	841.008	—
(30%Imax)	1261.51	—
(40%Imax)	1682.02	—
(50%Imax)	2102.52	—
(60%Imax)	2523.02	—
(70%Imax)	2943.53	—
(80%Imax)	3364.03	—
(90%Imax)	3784.54	—



(10%Emax)	105.126	—
(20%Emax)	210.2518	—
(30%Emax)	315.3775	—
(40%Emax)	420.5025	—
(50%Emax)	525.63	—
(60%Emax)	630.755	—
(70%Emax)	735.88	—
(80%Emax)	841.0075	—
(90%Emax)	946.1325	—



Luminance Table

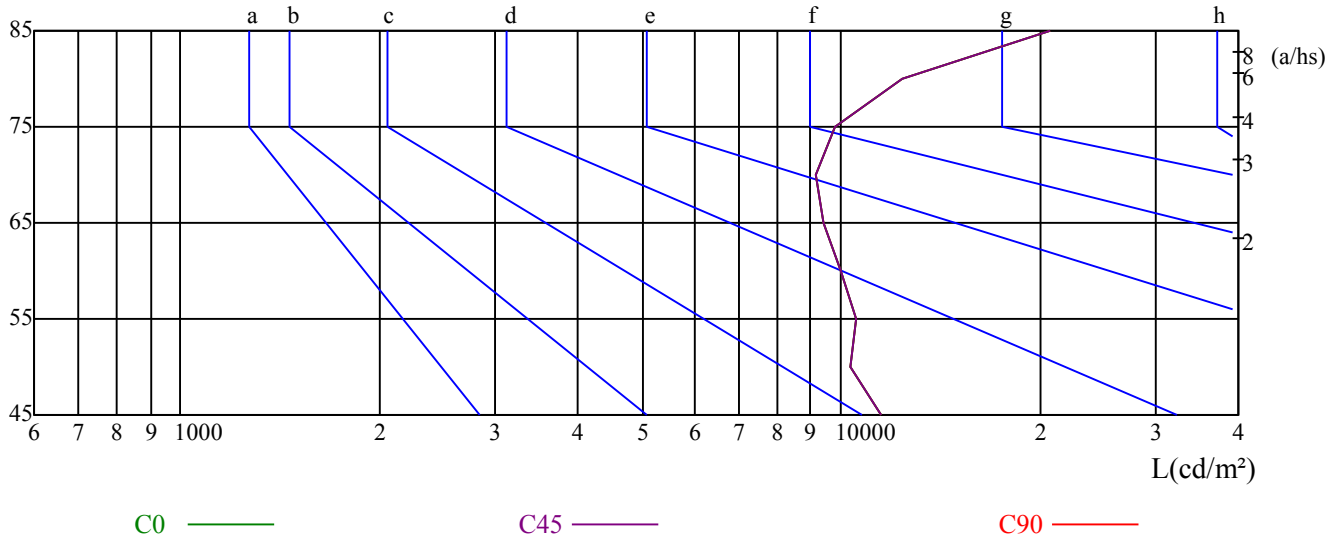
γ	45	50	55	60	65	70	75	80	85
C0	11474	10350	10561	9972	9417	9188	9766	12363	20734
C45	11474	10350	10561	9972	9417	9188	9766	12363	20734
C90	11474	10350	10561	9972	9417	9188	9766	12363	20734

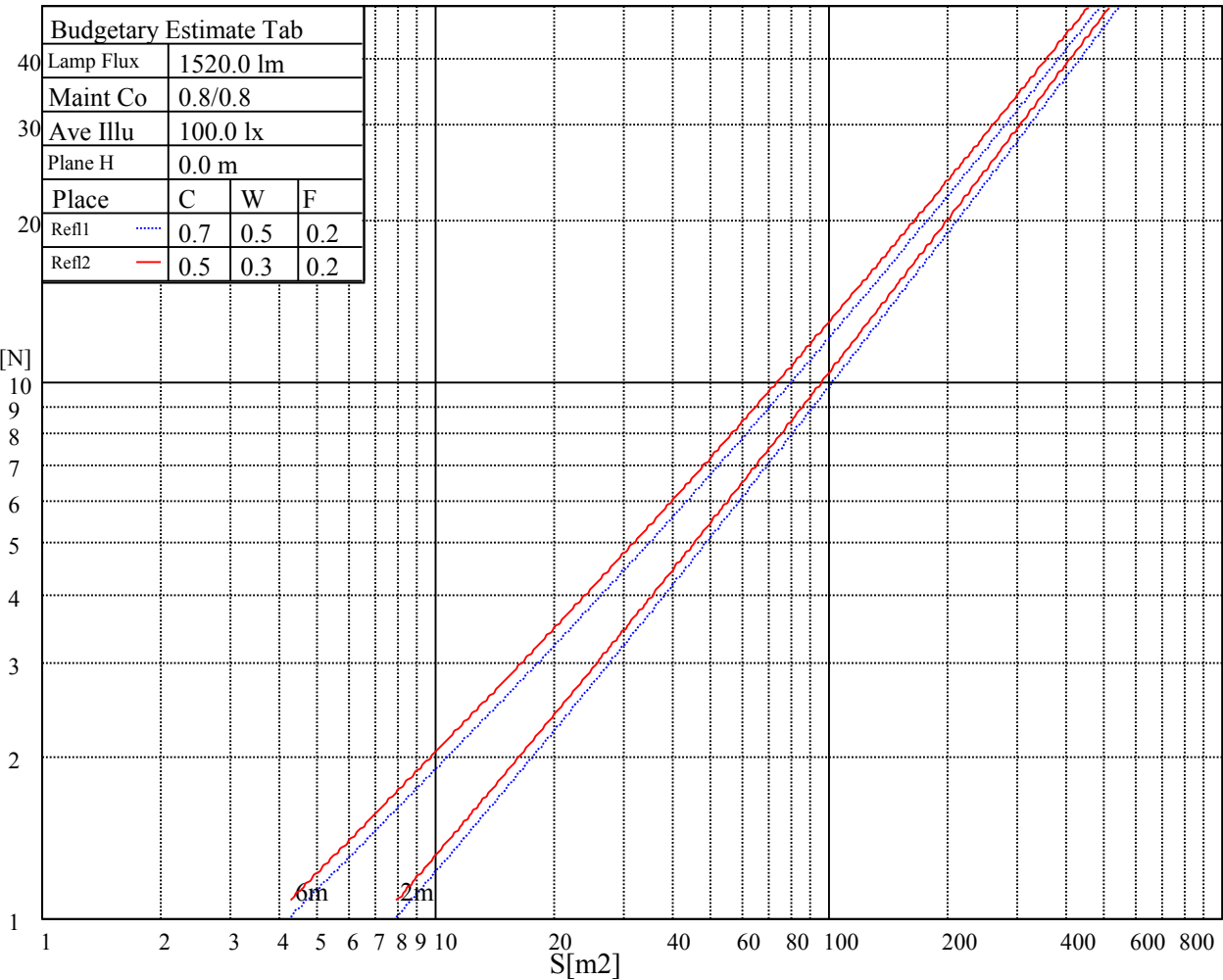
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
9417	9417	9417	9766	9766	9766	20734	20734	20734

Glare Table

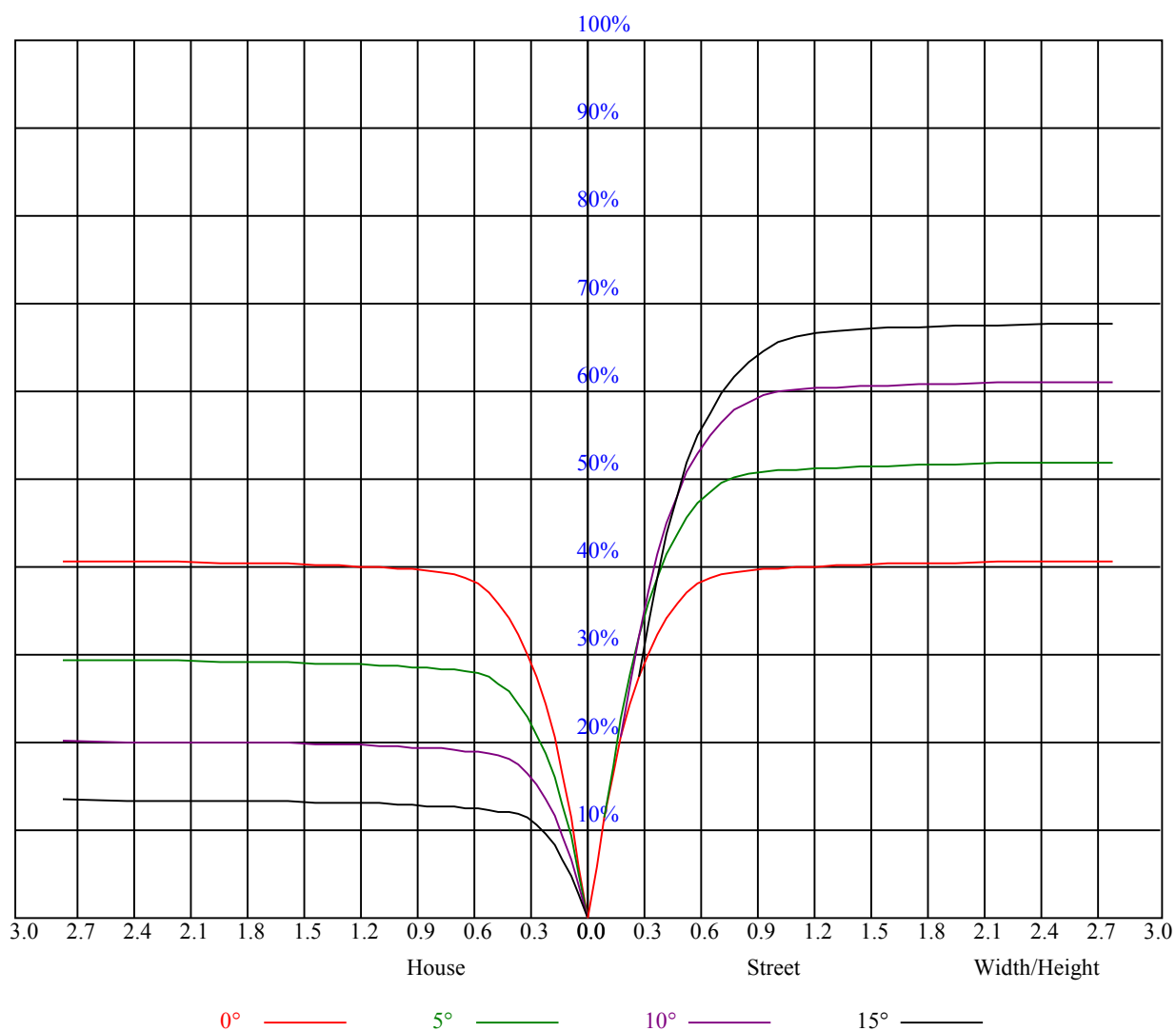
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

Luminance Limiting Curve

 $\gamma(^{\circ})$ 



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	0.98	0.98	0.98	0.95	0.95	0.95	0.91	0.91	0.91	0.87	0.87	0.87	0.84	0.84	0.84	0.82
1	0.91	0.89	0.88	0.90	0.88	0.86	0.86	0.85	0.84	0.83	0.82	0.81	0.80	0.80	0.79	0.77
2	0.86	0.83	0.80	0.84	0.82	0.79	0.82	0.80	0.78	0.79	0.78	0.76	0.77	0.76	0.75	0.73
3	0.81	0.78	0.75	0.80	0.77	0.74	0.78	0.75	0.73	0.76	0.74	0.72	0.74	0.72	0.71	0.70
4	0.77	0.73	0.70	0.76	0.72	0.70	0.74	0.71	0.69	0.73	0.70	0.68	0.71	0.69	0.67	0.66
5	0.73	0.69	0.66	0.72	0.69	0.66	0.71	0.68	0.65	0.70	0.67	0.65	0.69	0.66	0.64	0.63
6	0.70	0.66	0.63	0.69	0.65	0.63	0.68	0.65	0.62	0.67	0.64	0.62	0.66	0.63	0.61	0.60
7	0.67	0.63	0.60	0.66	0.62	0.60	0.65	0.62	0.59	0.64	0.61	0.59	0.64	0.61	0.59	0.58
8	0.64	0.60	0.57	0.64	0.60	0.57	0.63	0.59	0.57	0.62	0.59	0.57	0.61	0.58	0.56	0.55
9	0.62	0.57	0.55	0.61	0.57	0.55	0.60	0.57	0.54	0.60	0.57	0.54	0.59	0.56	0.54	0.53
10	0.59	0.55	0.53	0.59	0.55	0.53	0.58	0.55	0.52	0.58	0.54	0.52	0.57	0.54	0.52	0.51



NATA 2-1284-N

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	4210.31	4169.25	4092.19	3959.44	3798.56	3598.88	3350.25	3122.44	2883.38
45.0	4210.31	4201.88	4154.06	4060.13	3925.69	3737.25	3508.88	3277.69	3009.94
90.0	4213.69	4208.06	4162.50	4076.44	3949.31	3763.69	3571.88	3317.06	3044.81
135.0	4189.50	4227.75	4217.06	4171.50	4075.88	3910.50	3742.31	3512.25	3291.19
180.0	4210.31	4209.75	4179.94	4106.25	3966.75	3806.44	3614.63	3330.56	3096.56
225.0	4210.31	4181.06	4102.88	3999.94	3849.19	3652.88	3408.75	3171.38	2891.81
270.0	4213.69	4168.69	4064.63	3947.06	3778.31	3547.13	3326.06	3100.50	2829.38
315.0	4182.19	4096.69	3997.13	3806.44	3632.63	3432.38	3200.63	2912.63	2670.19
360.0	4210.31	4169.25	4092.19	3959.44	3798.56	3598.88	3350.25	3122.44	2883.38
C/ γ (°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	2584.69	2349.56	2131.88	1904.63	1711.13	1565.44	1423.13	1305.00	1213.88
45.0	2763.56	2481.75	2215.69	2010.94	1817.44	1620.00	1485.00	1370.81	1245.38
90.0	2795.63	2518.88	2259.56	2042.44	1844.44	1634.63	1487.25	1361.25	1239.19
135.0	3022.88	2750.06	2505.38	2249.44	2016.00	1827.56	1681.88	1486.13	1368.00
180.0	2846.25	2528.44	2299.50	2086.88	1868.06	1684.69	1542.38	1406.81	1300.50
225.0	2610.00	2368.69	2112.75	1901.25	1702.13	1537.31	1411.88	1303.31	1118.14
270.0	2557.69	2314.69	2059.31	1861.31	1665.56	1495.13	1369.69	1250.44	1149.19
315.0	2431.13	2145.94	1942.31	1758.94	1586.81	1441.13	1332.56	1226.25	1117.97
360.0	2584.69	2349.56	2131.88	1904.63	1711.13	1565.44	1423.13	1305.00	1213.88
C/ γ (°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	1123.31	1050.75	977.06	913.50	864.00	819.00	770.63	734.63	696.38
45.0	1155.94	1073.81	1006.88	921.38	867.38	820.13	770.06	727.88	688.50
90.0	1116.34	1044.68	964.24	892.01	837.84	782.61	738.68	691.82	648.90
135.0	1275.75	1162.13	1074.38	1013.06	933.75	871.31	825.19	768.94	731.81
180.0	1116.45	1088.27	1026.00	951.92	883.97	841.44	795.60	739.01	705.99
225.0	1108.52	1034.44	956.25	902.14	853.99	796.95	761.57	725.34	682.65
270.0	1072.69	1001.25	919.69	862.88	817.31	767.25	723.94	689.63	648.56
315.0	1054.13	975.94	918.00	858.83	807.86	769.11	730.41	685.74	649.35
360.0	1123.31	1050.75	977.06	913.50	864.00	819.00	770.63	734.63	696.38
C/ γ (°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	648.00	603.56	552.94	485.44	407.81	336.38	291.94	183.88	130.28
45.0	651.38	609.75	568.13	514.13	451.69	379.69	299.81	291.38	176.40
90.0	611.10	574.43	525.94	481.73	433.01	358.20	296.27	240.02	186.19
135.0	690.19	645.75	610.31	568.13	506.25	445.50	387.56	298.13	290.25
180.0	669.99	628.54	584.21	535.56	471.43	395.49	323.89	248.46	186.86
225.0	645.81	606.43	549.90	502.03	430.14	344.25	282.83	218.08	140.12
270.0	606.38	566.44	513.00	457.31	387.00	315.00	291.38	184.28	133.65
315.0	610.31	557.83	494.33	429.24	352.35	275.74	212.01	148.16	102.43
360.0	648.00	603.56	552.94	485.44	407.81	336.38	291.94	183.88	130.28
C/ γ (°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	93.88	61.88	46.74	40.22	34.99	32.12	29.87	27.45	25.88
45.0	118.91	86.51	66.38	52.31	45.39	40.61	36.39	32.85	30.26
90.0	130.44	96.30	71.27	51.24	43.65	38.76	35.16	32.34	30.21
135.0	176.85	122.51	83.03	60.58	47.64	41.23	36.51	33.30	30.77
180.0	128.93	86.74	60.81	45.06	39.04	34.65	31.95	29.08	27.17
225.0	103.61	74.08	53.49	42.92	37.97	34.09	31.50	29.14	27.17
270.0	89.27	65.14	50.29	42.08	37.80	35.33	32.01	29.98	28.58
315.0	68.18	49.73	41.34	35.83	32.40	30.15	28.18	26.10	24.81
360.0	93.88	61.88	46.74	40.22	34.99	32.12	29.87	27.45	25.88

NATA 2-1284-N

Intensity data(cd)										Appendix Page: 17 Total:18	
C/ γ (°)	45.0	46.0	47.0	48.0	49.0	50.0	51.0	52.0	53.0		
0.0	24.53	23.12	22.16	21.43	20.70	20.25	20.03	19.74	19.35		
45.0	27.90	26.04	24.69	23.51	22.89	22.22	21.83	21.54	21.26		
90.0	28.41	27.06	25.93	24.86	24.13	23.57	23.06	22.56	22.11		
135.0	28.35	26.49	25.09	24.02	22.73	22.05	21.60	21.21	20.76		
180.0	25.54	24.13	22.78	21.77	21.04	20.48	20.03	19.74	19.52		
225.0	25.71	24.19	23.06	22.39	21.71	21.21	20.87	20.70	20.31		
270.0	26.83	25.82	24.92	24.08	23.34	22.89	22.50	22.11	21.66		
315.0	23.63	22.61	21.77	21.15	20.53	20.25	20.08	19.74	19.46		
360.0	24.53	23.12	22.16	21.43	20.70	20.25	20.03	19.74	19.35		
C/ γ (°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0		
0.0	19.07	18.62	18.11	17.61	16.88	16.31	15.58	14.96	14.34		
45.0	20.76	20.25	19.74	18.84	18.17	17.44	16.76	15.92	15.30		
90.0	21.49	20.81	20.08	19.18	18.34	17.55	16.65	15.92	15.24		
135.0	20.53	20.08	19.46	18.84	18.11	17.38	16.59	15.86	15.19		
180.0	19.18	18.90	18.39	17.83	17.10	16.48	15.92	15.24	14.63		
225.0	19.91	19.46	18.90	18.06	17.49	16.65	16.03	15.19	14.51		
270.0	21.09	20.59	19.97	19.18	18.34	17.66	16.59	15.98	15.24		
315.0	19.07	18.73	18.23	17.66	16.82	16.14	15.47	14.63	13.89		
360.0	19.07	18.62	18.11	17.61	16.88	16.31	15.58	14.96	14.34		
C/ γ (°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0		
0.0	13.73	13.05	12.54	12.21	11.70	11.81	10.74	9.73	9.28		
45.0	14.51	13.95	13.28	12.60	12.21	11.70	11.48	10.74	9.84		
90.0	14.51	13.89	13.22	12.54	12.09	11.59	11.14	10.69	9.96		
135.0	14.63	13.84	13.28	12.66	12.09	11.64	11.31	10.86	10.24		
180.0	14.01	13.50	12.83	12.38	11.93	11.53	11.36	10.74	9.73		
225.0	13.95	13.28	12.71	12.26	11.93	11.53	11.08	9.96	9.45		
270.0	14.57	13.78	13.33	12.66	12.15	11.87	10.91	9.79	9.23		
315.0	13.33	12.71	12.26	11.87	11.48	11.19	9.84	9.17	8.89		
360.0	13.73	13.05	12.54	12.21	11.70	11.81	10.74	9.73	9.28		
C/ γ (°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0		
0.0	8.94	8.61	8.38	8.16	7.88	7.65	7.37	7.20	6.98		
45.0	9.34	8.94	8.72	8.44	8.16	7.93	7.59	7.37	7.09		
90.0	9.28	8.89	8.55	8.21	7.93	7.65	7.37	7.20	6.92		
135.0	9.51	9.06	8.66	8.38	8.04	7.82	7.59	7.31	7.09		
180.0	9.28	8.89	8.66	8.38	8.10	7.88	7.59	7.43	7.14		
225.0	9.11	8.83	8.49	8.33	8.04	7.76	7.54	7.31	7.09		
270.0	8.89	8.55	8.33	7.99	7.76	7.54	7.26	7.09	6.81		
315.0	8.55	8.27	8.04	7.82	7.54	7.37	7.14	6.92	6.69		
360.0	8.94	8.61	8.38	8.16	7.88	7.65	7.37	7.20	6.98		
C/ γ (°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0		
0.0	6.69	6.47	6.30	6.13	5.91	5.74	5.34	5.18	5.12		
45.0	6.81	6.58	6.36	6.13	5.91	5.74	5.46	5.29	5.06		
90.0	6.64	6.41	6.19	5.91	5.74	5.57	5.34	5.12	5.01		
135.0	6.86	6.64	6.47	6.24	6.02	5.85	5.68	5.40	5.18		
180.0	6.92	6.75	6.47	6.36	6.13	5.96	5.57	5.34	5.18		
225.0	6.86	6.64	6.36	6.13	5.96	5.74	5.40	5.23	5.12		
270.0	6.53	6.30	6.08	5.85	5.63	5.46	5.12	5.01	4.95		
315.0	6.53	6.30	6.08	5.91	5.68	5.40	5.18	5.06	4.95		
360.0	6.69	6.47	6.30	6.13	5.91	5.74	5.34	5.18	5.12		

Intensity data(cd)

Appendix Page: 18 Total:18

C/ $\gamma(^{\circ})$	90.0
0.0	4.95
45.0	4.95
90.0	4.89
135.0	5.06
180.0	5.06
225.0	5.06
270.0	4.89
315.0	4.84
360.0	4.95