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Nata

LumCAT: 4-2275-M
Luminaire: 92.70.135.00
Report No: NATA0100
Test No: GC2018062606
LampCAT: NICHIA NFCWJ120B-V3
Lamp flux(lm): 2280.0
Number of Lamps: 1
Length(mm): 100
Phm Type: C

Voltage(V): 33.5000
Current(A): 0.5000
Power (W): 16.7500
PF: 0.0000
Ballast type: DC
Width(mm): 100
Height(mm): 0

Photometric Results

Lumens(lm): 2039.53
Efficiency(%): 89.45%
Lumens(lm)/Power(W): 122.32
Central intensity(cd): 10039.670
Maximum intensity(cd): 10039.670
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=20.2
[C90/270]Total=20.2
Field angle(10%Imax): [C0/180]Total=40.6
[C90/270]Total=40.6
Maximum s/h(1/2): C0_180=0.35 C90_270=0.35
Maximum s/h(1/4): C0_180=0.34 C90_270=0.34
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 89.86%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.256%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	10039.672	9.608	9.608	.421%	.471%
2.0	9819.171	75.155	84.763	3.296%	4.156%
4.0	9150.924	139.996	224.758	6.140%	11.020%
6.0	8117.172	186.082	410.841	8.161%	20.144%
8.0	6709.586	204.794	615.634	8.982%	30.185%
10.0	5085.078	193.657	809.291	8.494%	39.680%
12.0	3738.054	170.447	979.738	7.476%	48.038%
14.0	2555.718	135.598	1115.336	5.947%	54.686%
16.0	1790.503	108.238	1223.574	4.747%	59.993%
18.0	1301.561	88.209	1311.783	3.869%	64.318%
20.0	1026.052	76.964	1388.746	3.376%	68.092%
22.0	866.154	71.160	1459.906	3.121%	71.581%
24.0	793.356	70.770	1530.676	3.104%	75.051%
26.0	753.770	72.468	1603.144	3.178%	78.604%
28.0	726.910	74.844	1677.987	3.283%	82.273%
30.0	703.566	77.151	1755.138	3.384%	86.056%
32.0	679.410	78.960	1834.098	3.463%	89.928%
34.0	597.245	73.245	1907.343	3.213%	93.519%
36.0	415.752	53.594	1960.937	2.351%	96.147%
38.0	208.616	28.168	1989.105	1.235%	97.528%
40.0	48.140	6.786	1995.892	.298%	97.861%
42.0	16.971	2.491	1998.382	.109%	97.983%
44.0	11.190	1.705	2000.087	.075%	98.066%
46.0	10.020	1.581	2001.668	.069%	98.144%
48.0	9.745	1.588	2003.256	.070%	98.222%
50.0	9.504	1.597	2004.853	.070%	98.300%
52.0	9.325	1.612	2006.464	.071%	98.379%
54.0	9.174	1.628	2008.092	.071%	98.459%
56.0	9.057	1.647	2009.739	.072%	98.540%
58.0	8.974	1.669	2011.408	.073%	98.621%
60.0	8.912	1.693	2013.101	.074%	98.704%
62.0	8.843	1.712	2014.813	.075%	98.788%
64.0	8.802	1.735	2016.548	.076%	98.873%
66.0	8.775	1.758	2018.306	.077%	98.960%
68.0	8.726	1.774	2020.081	.078%	99.047%
70.0	8.720	1.797	2021.878	.079%	99.135%
72.0	8.685	1.812	2023.689	.079%	99.224%
74.0	8.665	1.827	2025.516	.080%	99.313%

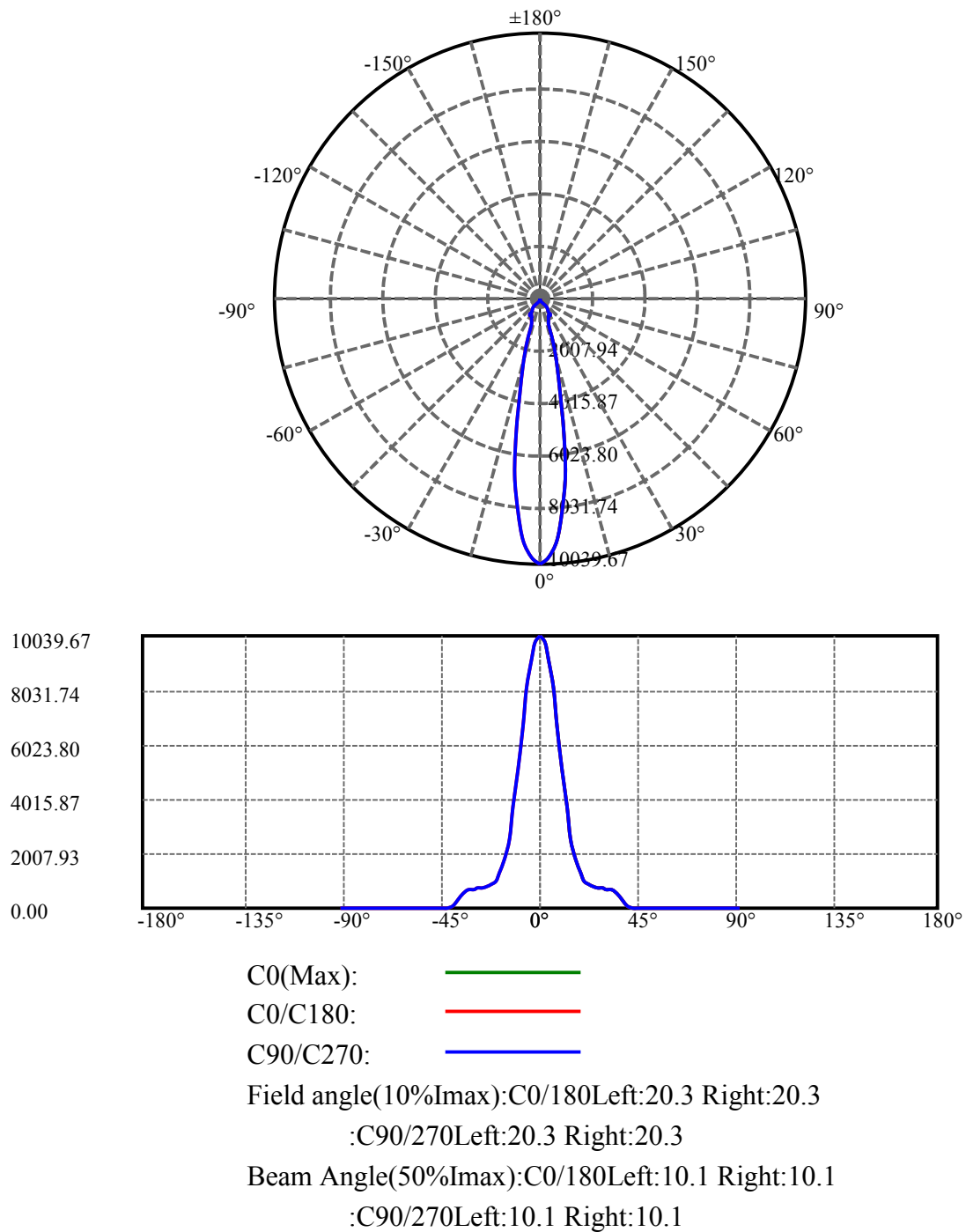
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	8.651	1.841	2027.357	.081%	99.403%
78.0	8.630	1.851	2029.208	.081%	99.494%
80.0	8.637	1.865	2031.073	.082%	99.586%
82.0	8.609	1.870	2032.943	.082%	99.677%
84.0	8.609	1.878	2034.821	.082%	99.769%
86.0	8.603	1.882	2036.703	.083%	99.862%
88.0	8.582	1.881	2038.584	.082%	99.954%
90.0	8.582	0.941	2039.525	.041%	100.000%

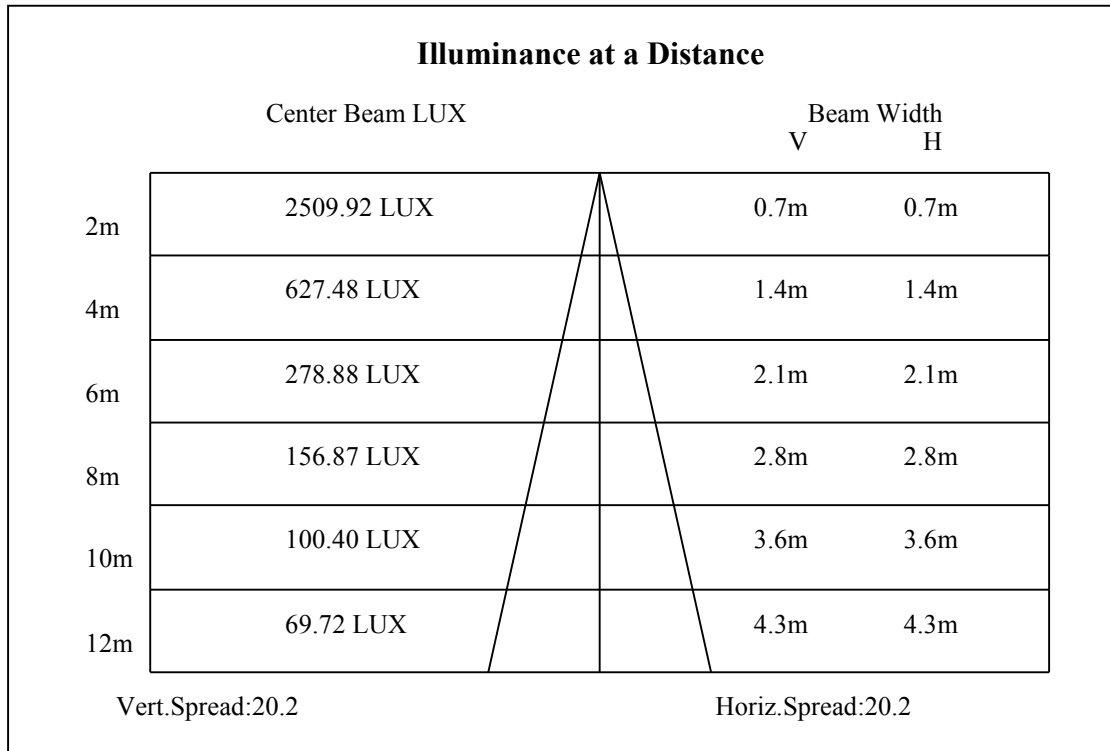
ZONAL LUMEN SUMMARY

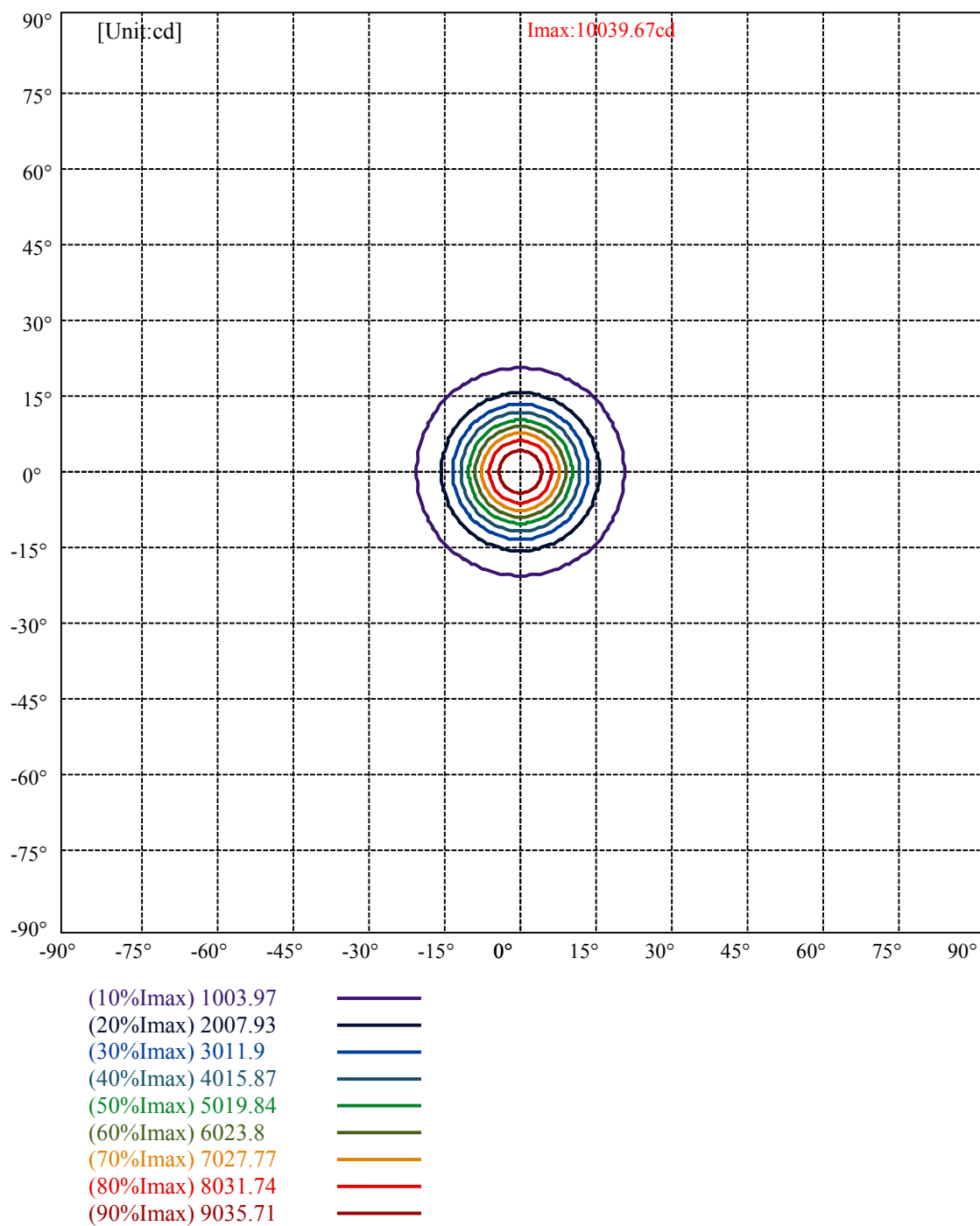
Zone	Lumens	%Lamp	%Fixt
0-30	1755.14	76.98%	86.06%
0-40	1995.89	87.54%	97.86%
0-60	2013.10	88.29%	98.70%
0-90	2038.58	89.41%	99.95%
0-120	2038.58	89.41%	99.95%
0-180	2039.53	89.45%	100.00%
60-90	27.18	1.19%	1.33%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-26.76	1631.62	71.56%	80.00%

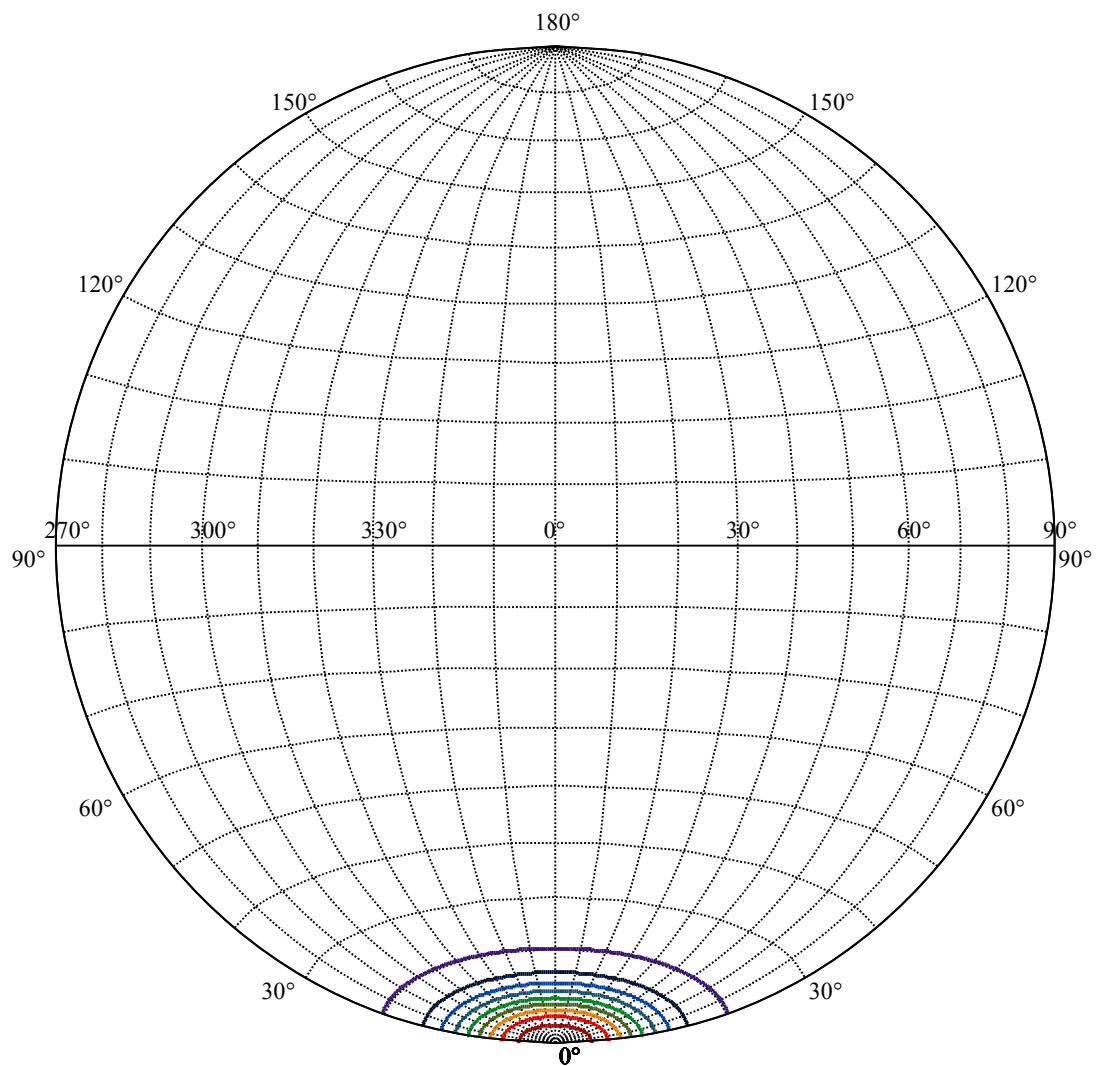
ZONAL LUMEN SUMMARY

0-10	809.29
10-20	579.46
20-30	366.39
30-40	240.75
40-50	8.96
50-60	8.25
60-70	8.78
70-80	9.20
80-90	7.51
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









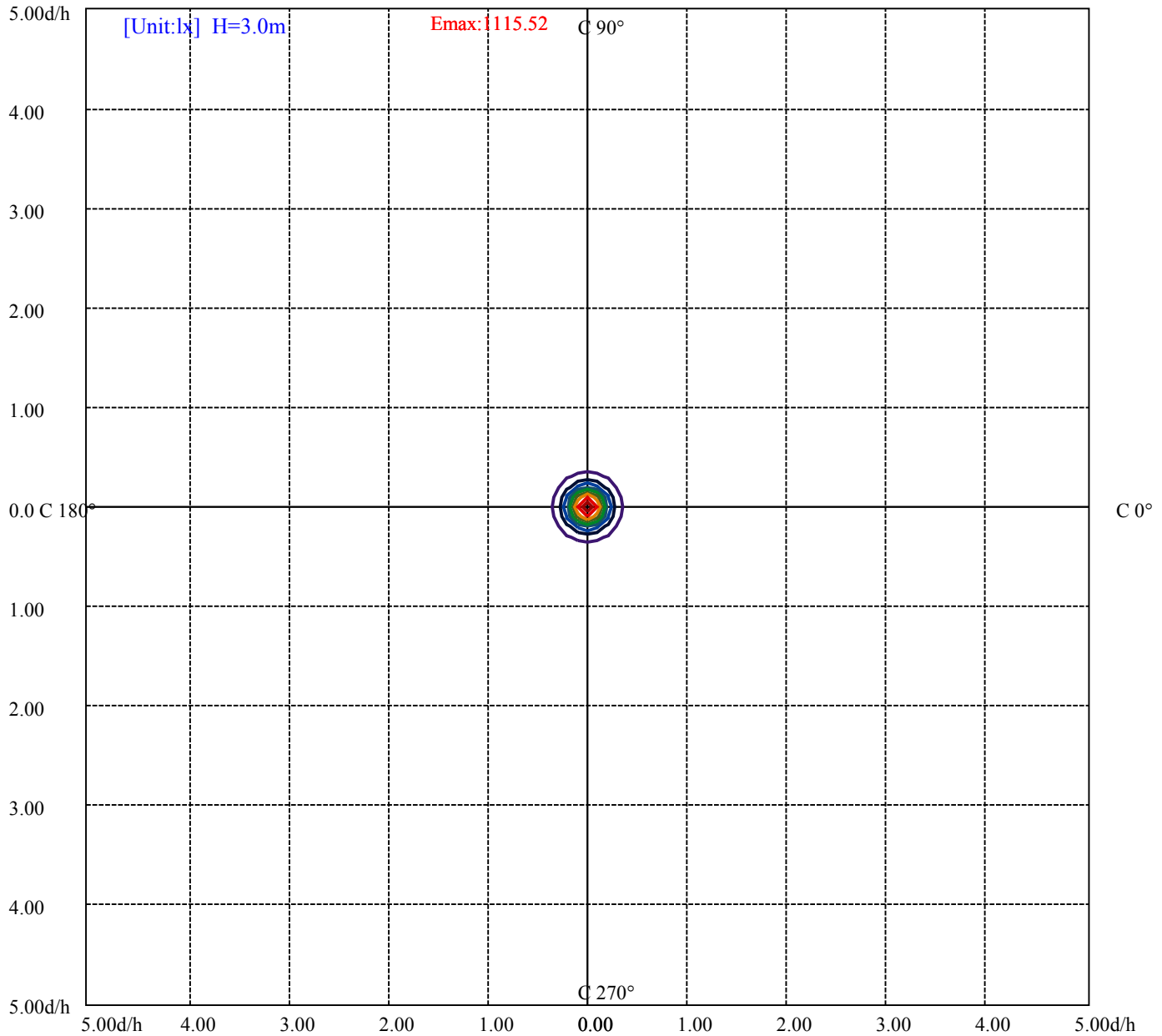
House

[Unit:cd]

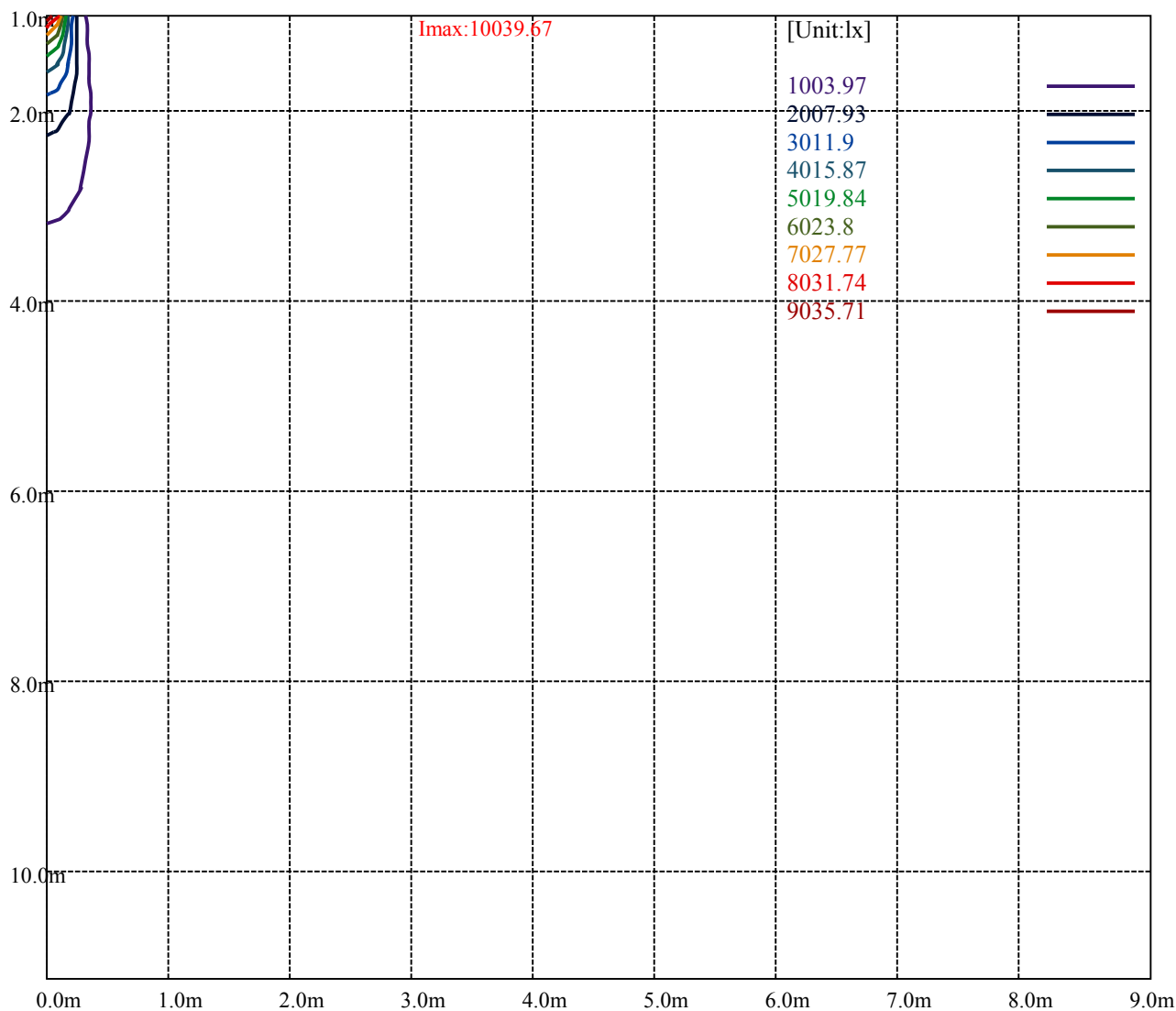
Road

Imax:10039.67

(10%Imax)	1003.97	—
(20%Imax)	2007.93	—
(30%Imax)	3011.9	—
(40%Imax)	4015.87	—
(50%Imax)	5019.84	—
(60%Imax)	6023.8	—
(70%Imax)	7027.77	—
(80%Imax)	8031.74	—
(90%Imax)	9035.71	—



(10%Emax)	111.5522	—
(20%Emax)	223.1033	—
(30%Emax)	334.6555	—
(40%Emax)	446.2067	—
(50%Emax)	557.7589	—
(60%Emax)	669.31	—
(70%Emax)	780.8622	—
(80%Emax)	892.4144	—
(90%Emax)	1003.966	—



Luminance Table

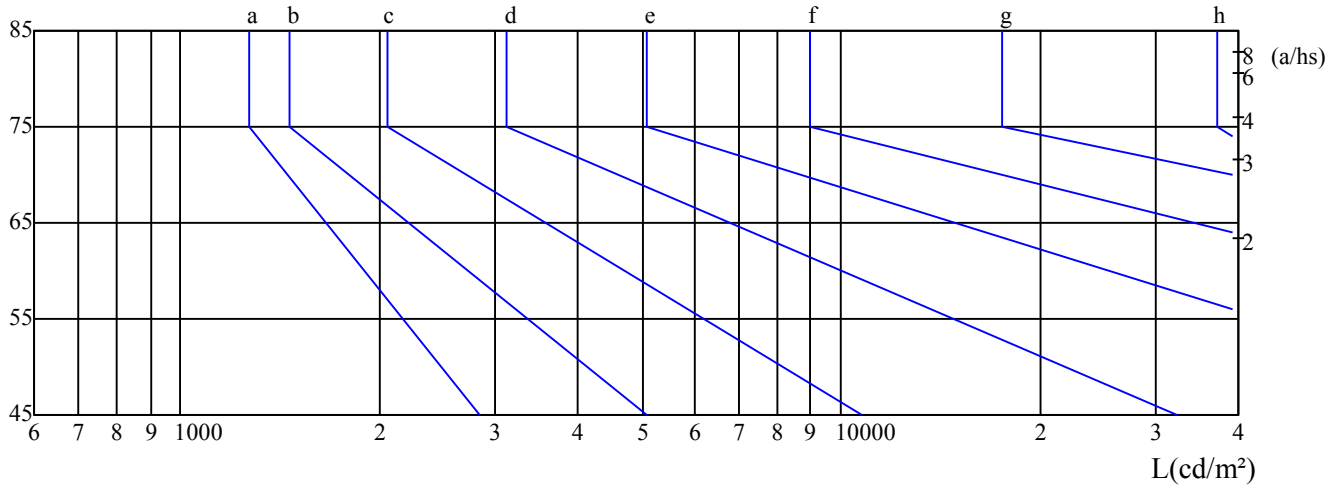
γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
0	0	0	0	0	0	0	0	0

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

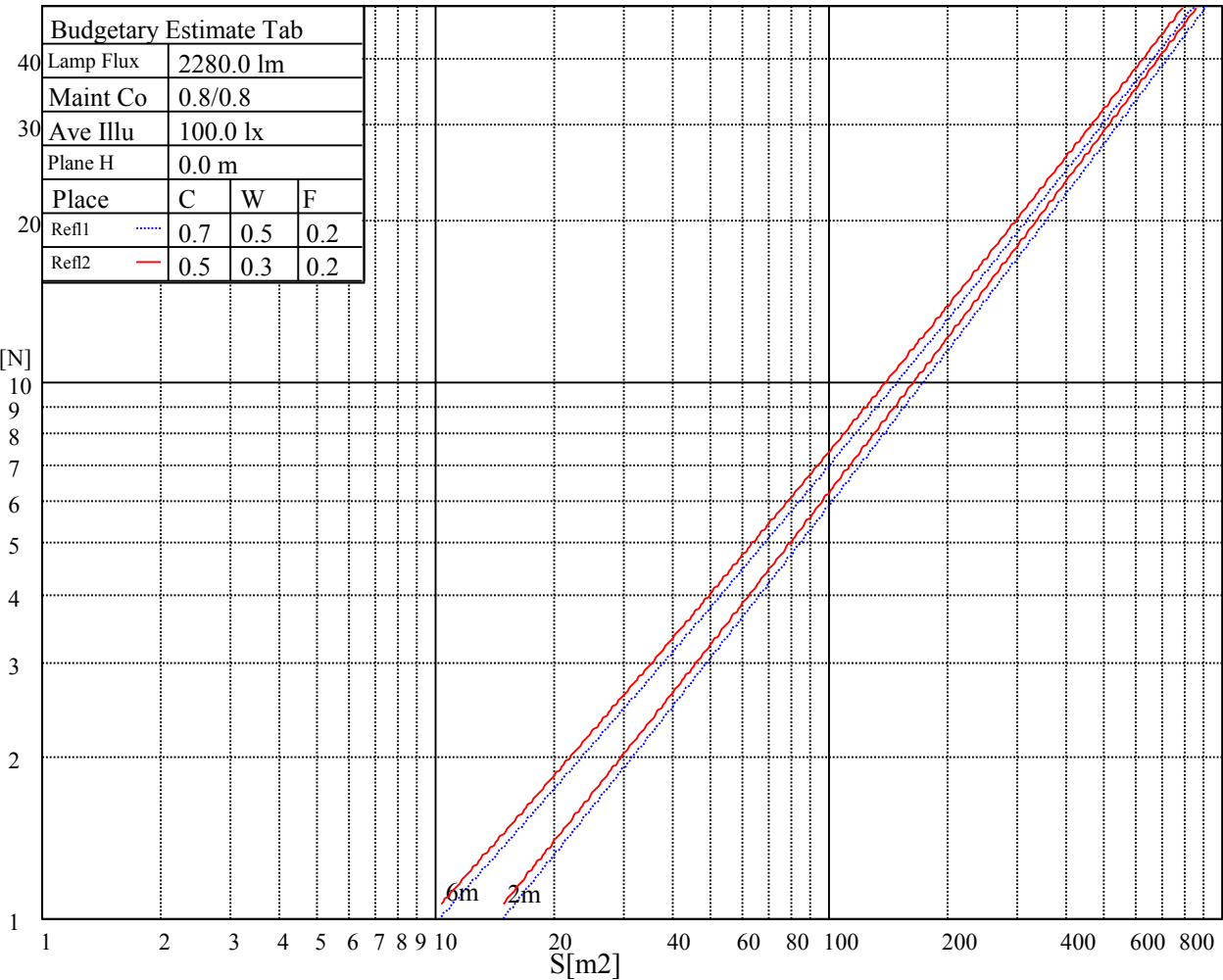
Luminance Limiting Curve

 $\gamma(^{\circ})$ 

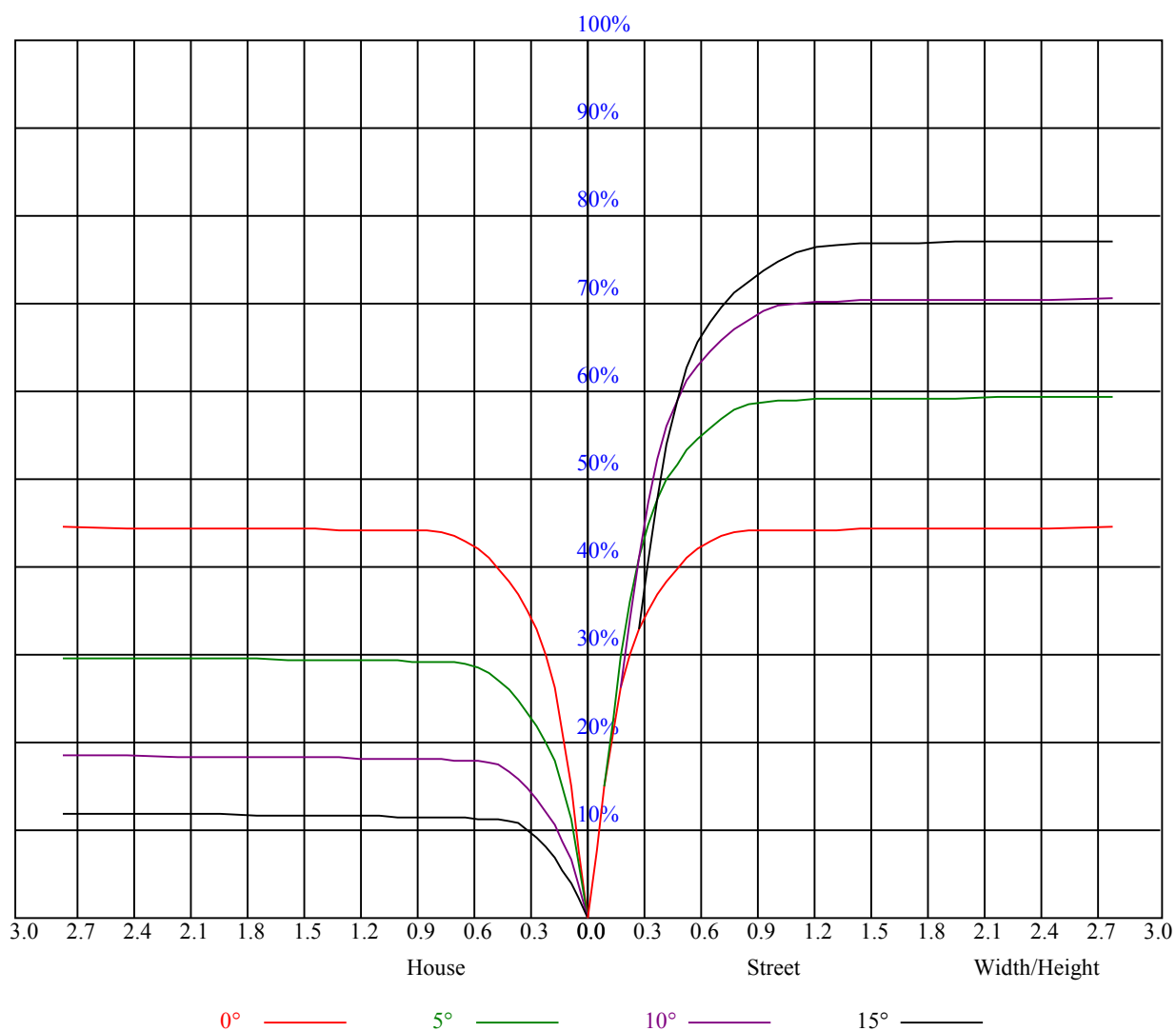
C0 ———

C45 ———

C90 ———



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	1.07	1.07	1.07	1.04	1.04	1.04	1.00	1.00	1.00	0.96	0.96	0.96	0.92	0.92	0.92	0.90
1	1.00	0.98	0.97	0.98	0.97	0.95	0.95	0.93	0.92	0.91	0.90	0.89	0.88	0.88	0.87	0.85
2	0.95	0.92	0.90	0.94	0.91	0.89	0.91	0.89	0.87	0.88	0.86	0.85	0.86	0.84	0.83	0.82
3	0.91	0.87	0.84	0.89	0.86	0.84	0.87	0.85	0.82	0.85	0.83	0.81	0.83	0.81	0.80	0.79
4	0.87	0.83	0.80	0.86	0.82	0.79	0.84	0.81	0.79	0.82	0.80	0.78	0.81	0.79	0.77	0.76
5	0.83	0.79	0.76	0.83	0.79	0.76	0.81	0.78	0.75	0.80	0.77	0.75	0.78	0.76	0.74	0.73
6	0.80	0.76	0.73	0.80	0.76	0.73	0.78	0.75	0.72	0.77	0.74	0.72	0.76	0.74	0.72	0.71
7	0.77	0.73	0.70	0.77	0.73	0.70	0.76	0.72	0.70	0.75	0.72	0.70	0.74	0.71	0.69	0.68
8	0.75	0.71	0.68	0.74	0.71	0.68	0.73	0.70	0.68	0.73	0.70	0.67	0.72	0.69	0.67	0.66
9	0.72	0.68	0.66	0.72	0.68	0.66	0.71	0.68	0.66	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	0.64	0.69	0.66	0.63	0.68	0.65	0.63	0.62



Intensity data(cd)

C/γ(°)	0.0	2.0	4.0	6.0	8.0	10.0	12.0	14.0	16.0
0.0	10023.57	9678.92	8891.61	7620.91	6234.04	4632.45	3373.31	2284.29	1597.19
45.0	10068.16	9757.65	9000.07	7879.67	6385.99	4744.76	3445.43	2346.50	1635.18
90.0	10043.94	9709.75	8882.25	7725.51	6226.33	4565.28	3220.25	2255.11	1597.19
135.0	10023.02	9911.25	9391.52	8467.12	7163.94	5539.22	4185.94	2788.61	1925.87
180.0	10023.57	9927.22	9407.49	8562.37	7204.68	5564.00	4159.51	2856.33	2016.72
225.0	10068.16	9931.07	9350.23	8373.53	7058.78	5438.47	3979.48	2789.71	1967.72
270.0	10043.94	9939.33	9373.35	8497.40	7126.50	5532.62	4164.47	2842.01	1958.91
315.0	10023.02	9698.18	8910.88	7810.85	6276.43	4663.83	3376.06	2283.19	1625.26
360.0	10023.57	9678.92	8891.61	7620.91	6234.04	4632.45	3373.31	2284.29	1597.19
C/γ(°)	18.0	20.0	22.0	24.0	26.0	28.0	30.0	32.0	34.0
0.0	1211.79	954.68	832.45	777.95	746.56	722.34	703.62	678.85	560.47
45.0	1249.78	964.59	833.00	775.74	744.91	721.24	698.67	676.09	564.33
90.0	1085.22	951.15	815.83	766.44	734.12	710.83	689.80	664.53	546.27
135.0	1452.39	1088.47	895.77	806.03	758.13	726.19	702.52	679.95	635.90
180.0	1465.60	1083.90	896.54	805.31	757.80	727.46	703.13	678.63	625.66
225.0	1417.15	1097.60	904.41	813.57	766.33	737.98	710.78	685.78	633.04
270.0	1446.88	1104.98	916.14	819.24	772.99	742.71	716.83	693.16	650.77
315.0	1083.68	963.05	835.10	782.57	749.32	726.52	703.18	678.29	561.52
360.0	1211.79	954.68	832.45	777.95	746.56	722.34	703.62	678.85	560.47
C/γ(°)	36.0	38.0	40.0	42.0	44.0	46.0	48.0	50.0	52.0
0.0	368.88	133.18	23.07	13.93	10.30	9.91	9.63	9.41	9.25
45.0	362.27	146.45	31.93	14.37	10.24	9.97	9.69	9.52	9.36
90.0	350.43	149.86	23.95	13.98	10.24	9.91	9.69	9.47	9.30
135.0	471.83	288.50	72.18	18.94	11.67	10.02	9.80	9.52	9.36
180.0	466.99	260.47	66.45	20.15	12.06	10.02	9.74	9.52	9.30
225.0	459.01	250.12	66.78	20.43	12.17	10.24	9.86	9.58	9.36
270.0	487.25	286.84	77.41	19.60	12.55	10.24	9.91	9.63	9.41
315.0	359.35	153.50	23.34	14.37	10.30	9.86	9.63	9.36	9.25
360.0	368.88	133.18	23.07	13.93	10.30	9.91	9.63	9.41	9.25
C/γ(°)	54.0	56.0	58.0	60.0	62.0	64.0	66.0	68.0	70.0
0.0	9.08	8.97	8.92	8.86	8.81	8.75	8.75	8.70	8.70
45.0	9.19	9.08	8.97	8.92	8.86	8.81	8.81	8.75	8.75
90.0	9.14	9.08	8.97	8.92	8.86	8.81	8.75	8.75	8.70
135.0	9.25	9.08	9.03	8.97	8.86	8.86	8.81	8.75	8.75
180.0	9.19	9.08	8.97	8.92	8.81	8.81	8.75	8.70	8.70
225.0	9.19	9.08	8.97	8.92	8.86	8.75	8.75	8.70	8.70
270.0	9.25	9.08	9.03	8.92	8.86	8.86	8.81	8.75	8.75
315.0	9.08	8.97	8.92	8.86	8.81	8.75	8.75	8.70	8.70
360.0	9.08	8.97	8.92	8.86	8.81	8.75	8.75	8.70	8.70
C/γ(°)	72.0	74.0	76.0	78.0	80.0	82.0	84.0	86.0	88.0
0.0	8.64	8.64	8.59	8.59	8.59	8.59	8.53	8.59	8.59
45.0	8.70	8.64	8.64	8.64	8.64	8.59	8.59	8.59	8.59
90.0	8.70	8.70	8.70	8.64	8.64	8.64	8.64	8.64	8.59
135.0	8.70	8.70	8.64	8.64	8.64	8.64	8.64	8.59	8.59
180.0	8.70	8.64	8.64	8.59	8.64	8.59	8.59	8.59	8.53
225.0	8.64	8.64	8.64	8.64	8.59	8.59	8.59	8.59	8.59
270.0	8.75	8.70	8.70	8.70	8.70	8.64	8.70	8.64	8.59
315.0	8.64	8.64	8.64	8.59	8.64	8.59	8.59	8.59	8.59
360.0	8.64	8.64	8.59	8.59	8.59	8.59	8.53	8.59	8.59

Intensity data(cd)

Appendix Page: 16 Total:16

C/ γ (°)	90.0
0.0	8.59
45.0	8.59
90.0	8.59
135.0	8.59
180.0	8.53
225.0	8.59
270.0	8.59
315.0	8.59
360.0	8.59